THE ACQUISITION OF BASIC CONDUCTING SKILLS BY BEGINNING
CONDUCTORS: A COMPARISON OF THE EFFECTS OF
GUIDED AND UNGUIDED VIDEOTAPEd MODELING

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of the Ohio State University

By

David Alan Leppla, B.S.M.E., M.A.

*****

The Ohio State University

1989

Dissertation Committee:
A. Peter Costanza
Judith K. Delzell
Craig J. Kirchhoff

Approved by:

Advisor
School of Music
To my parents

Ralph and Helen Leppila
ACKNOWLEDGMENTS

The author wishes to express deep appreciation and gratitude to the following persons:

Dr. A Peter Costanza, advisor and friend, for his patience, guidance, and continued support throughout my doctoral studies and this project.

Dr. Judith K. Delzell, for her friendship and invaluable assistance on this project, and for her support and encouragement whenever it was needed.

Professor Craig J. Kirchhoff, for his guidance, support, and willingness to share his boundless wisdom on the ways of the conductor, as well as his invaluable assistance in preparing the modeling tapes used in this study and his service on the panel of expert judges.

Frederick S. Ruland, for his patience, tutoring, and suggestions on the statistical calculations in this study.

Thomas Groth, John Taylor, and Jeremy Brown for their time, efforts, and expertise as members of the panel of expert judges.
Betty Bush and Bruce Moss, for allowing the recruitment of subjects for this study from their Beginning Conducting classes.

My wife, Victoria, for her editorial work on this document, along with her constant encouragement, understanding, support, and love, without which this project and my graduate studies would have been impossible.
VITA

September 12, 1950.......................... Born - Cleveland, Ohio

1972........................................B.S. in Music Education, The University of Dayton, Dayton, Ohio

1972 - 1977............................... Director of Bands, Canton (Ohio) Central Catholic High School

1977 - 1980............................... Director of Bands, Kettering (Ohio) Alter High School

1980 - 1983............................... Director of Bands, Vandalia-Butler City Schools, Vandalia, Ohio

1983 - 1984............................... Director of Bands, Clear Fork Valley Local Schools, Bellville, Ohio

1984 - 1985............................... Director of Bands, Loudonville - Perrysville Exempted Village Schools, Loudonville, Ohio

1986........................................... M.A. in Music Education, The Ohio State University, Columbus, Ohio

1986 - Present............................. Graduate Teaching Associate, School of Music, The Ohio State University, Columbus, Ohio
FIELDS OF STUDY

Major Field: Music Education

Studies in Music Education: Professors A. Peter Costanza, Judith K. Delzell, Jere L. Forsythe, Jerry E. Lowder, and Jon R. Woods

Studies in Wind Conducting and Literature: Professors Harvey G. Benstein and Craig J. Kirchhoff

Study in Bassoon Performance: Professor Christopher R. Weait
# TABLE OF CONTENTS

DEDICATION ........................................................................................................ ii

ACKNOWLEDGMENTS .................................................................................... iii

VITA ..................................................................................................................... v

LIST OF TABLES ................................................................................................ x

LIST OF FIGURES ........................................................................................... xii

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Need for the Study</td>
<td>2</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>9</td>
</tr>
<tr>
<td>The Research Hypothesis</td>
<td>10</td>
</tr>
<tr>
<td>The Null Hypothesis</td>
<td>10</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>11</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>14</td>
</tr>
<tr>
<td>II. REVIEW OF THE LITERATURE</td>
<td>16</td>
</tr>
<tr>
<td>The Study of Conducting Technique</td>
<td>16</td>
</tr>
<tr>
<td>The Use of Videotape Feedback</td>
<td>20</td>
</tr>
<tr>
<td>Modeling and Simulation Techniques</td>
<td>22</td>
</tr>
</tbody>
</table>
III. PROCEDURE ................................................................. 27
   Subjects ................................................................. 28
   Research Design ....................................................... 29
   Basic Conducting Skills ............................................. 31
   The Modeling and Guided Modeling Videotapes ................. 33
   The Treatment .......................................................... 37
   Evaluation Form ....................................................... 40
   Post-test Evaluation ................................................ 41

IV. PRESENTATION OF THE DATA .......................................... 45
   Interobserver Agreement ............................................. 46
   Comparison of Treatments ......................................... 49

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS ............. 53
   Introduction ............................................................ 53
   Purpose of the Study ................................................ 56
   Research Design ....................................................... 56
   The Research Hypothesis ............................................ 58
   The Null Hypothesis .................................................. 58
   Methodology ............................................................ 58
   Results and Discussion .............................................. 60
   Conclusions ............................................................ 64
   Recommendations for Further Research .......................... 65

REFERENCES ................................................................. 68

APPENDICES

   A. Letter to All Participants ....................................... 73
   B. Questionnaire/Consent Form .................................... 75
   C. Guided Modeling Tape (Tape B) Transcript of Dialogue .... 77
D. Study Participants' Instruction Sheet
E. Basic Conducting Skills Evaluation Form
F. Post-Test Conducting Exercise
G. Music 262.11 Syllabus
H. Review Panel Instruction Sheet
I. Summary Data – Judges' Ratings of Subjects' Performance On a Post-Test of the Five Basic Conducting Skills
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interobserver Agreement By Skill: Posture and Baton Position (P), Preparatory Beat (B), Rebound (Rb), Release (Rl), and Legato Style (L)</td>
<td>48</td>
</tr>
<tr>
<td>2. Summary Data on Judges' (N=4) Ratings of Subjects' (N=25) Performance of the Five Basic Conducting Skills, Listed by Skill and Treatment</td>
<td>49</td>
</tr>
<tr>
<td>3. <em>t</em>-test For Treatment A (modeling only) and Treatment B (guided modeling) Scores on Conducting Post-test of the Five Basic Conducting Skills</td>
<td>51</td>
</tr>
<tr>
<td>4. Mann-Whitney U Test for Treatment A (modeling only) and Treatment B (guided modeling) on the Five Basic Conducting Skills</td>
<td>52</td>
</tr>
<tr>
<td>5. Judges' Ratings of Subject Performance on Skill #1 - Posture and Baton Position</td>
<td>100</td>
</tr>
<tr>
<td>6. Judges' Ratings of Subject Performance on Skill #2 - Preparatory Beat</td>
<td>101</td>
</tr>
<tr>
<td>7. Judges' Ratings of Subject Performance on Skill #3 - Rebound</td>
<td>102</td>
</tr>
<tr>
<td>8. Judges' Ratings of Subject Performance on Skill #4 - Release Gesture</td>
<td>103</td>
</tr>
</tbody>
</table>
9. Judges' Ratings of Subject Performance on Skill #5 - Legato Style ......................................................... 104
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Likert Scale Groupings for Interobserver Agreement</td>
<td>47</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

The role of the modern conductor is indeed a complex and demanding one, involving the need for great personal command of technical and musical skills and knowledge, as well as organizational and leadership skills. Volumes have been written by those who would teach others to conduct, each volume with its own "unique" approach to training those who aspire to the "art of conducting". Yet, no matter how sophisticated the text, no matter how detailed the diagrams, the development of a master conductor is never guaranteed. So demanding and often frustrating is the task of teaching conducting that many would believe the often repeated phrase that "conducting cannot be learnt; either one is born a conductor or one never becomes one" (Scherchen, 1940, p. 3). But, as noted conductor Frederick Fennell stated, "conducting is literally almost impossible to teach; and yet, we have to try and teach it" (Garofalo, 1981, p. 23).

In the United States, much of the effort toward formal training in conducting is relegated to the college and university level. While there is
ample evidence of an increase in summer clinics and seminars in conducting, these are often aimed at the so-called “practicing” conductor and assume a certain degree of competence. The basic skills of conducting must be taught and drilled within the confines of the college conducting sequence. This is no small task, and involves some serious analysis of what makes a person a fine conductor. As Elizabeth Green (1981) states, “to stand in front of an orchestra, band, or chorus and beat time does not make one a conductor” (p. 1).

In order to create an effective conducting curriculum, those involved in planning the conducting program must determine what skills need to be taught, and assess the most effective way of teaching those skills within the given constraints of time and physical facilities.

Need for the Study

An important part of planning an effective conducting curriculum is the determination of the necessary or desirable competencies which students will develop through participation in the conducting sequence. Not only does each individual conducting textbook propose its own basic set of competencies, sometimes directly and other times by implication, but various other organizations also offer input and advice on the subject.

The College Band Directors National Association (CBDNA) cites the following specific desired outcomes from the conducting sequence (1977):
1. demonstrate effective technical facility;
2. demonstrate coordinated conducting gestures;
3. convey proper interpretation and style through baton technique;
4. familiarity with various methods of score study and memorization;
5. competency in score analysis;
6. familiarity with the psychology of rehearsing and psychological differences in players. (p. 12)

The National Association of Schools of Music (NASM) states a succinct guideline for its member institutions (1987):

It is important that instruction in conducting include score reading and the integration of analysis, style, performance practices, and baton techniques. Laboratory experiences that give the student opportunities to apply rehearsal techniques and procedures are essential. (p. 59)

The various conducting texts currently available all have their own unique areas of emphasis. Elizabeth Green (1981) emphasizes the need for a well-practiced manual technique and thorough score study skills. Prausnitz (1983) calls for a discipline that enables the student to "absorb and work with information available in the score" along with the attainment of basic physical skills which enable the conductor to effectively communicate his knowledge of the score. Rudolph (1980) makes extensive use of model conducting diagrams in his text which can be enlarged and used by the student in attaining a solid physical technique.
McElheran (1966) suggests a variety of exercises for developing physical technique, while Leinsdorf (1981) places a great deal of emphasis on musical "literacy", including a knowledge of the composer, the score, and musical tradition. Labuta (1982) stresses score study and the development of an "inner hearing" of the score. Long (1971) stresses solid technique and the ability to solve the musical problems of the ensemble. Hunsberger and Ernst (1983) focus their concerns on conducting technique, score reading, and score analysis.

It would seem that a philosophical goal of a solid conducting curriculum would be to provide the opportunities and experiences that would enable the student to acquire the knowledge and develop the skills and abilities that would prepare him to effectively teach, rehearse, and conduct an elementary or secondary performing group. Undergraduate conducting programs should be concerned with providing the most effective means possible for acquiring the necessary conducting skills and the opportunity to practice and evaluate these skills. Labuta (1965) states that the basis for a conducting course must be derived from the "nature of musical expression, the principles of musical learning, and the musical and societal needs of the person who conducts" (p. 7).

In order to understand the extent of the problem faced by those who would construct an effective conducting curriculum, it is important to see
the wide range of skills that could reasonably be included in such a curriculum. The following list of skills (not in any particular priority order) has been culled from the aforementioned conducting texts:

1. effective baton technique;
2. use and development of the left hand;
3. effective body language for the conductor;
4. score reading techniques, including clefs, transpositions, terminology, orchestration schemes;
5. visual error detection skills;
6. aural error detection skills;
7. methods of error correction;
8. score analysis techniques;
9. effective rehearsal techniques - planning and pacing;
10. organization of the ensemble - seating, acoustics;
11. non-verbal communication techniques;
12. leadership skills - interpersonal relationships with the performing ensemble;
13. ensemble repertoire - selection of music;
14. interpreting the score - developing an inner concept;
15. knowledge of styles and compositional techniques;
16. knowledge of standard performance practices;
17. knowledge of instrumental techniques, including pitch tendencies of the various instruments.

The serious question here is one of time. How can we teach all of these concepts within the span of the undergraduate conducting sequence? A portion of what the competent conductor must know can be taught in courses other than conducting. Instruction in music history, music theory, musical analysis, musical form, music listening skills, ear training, the
psychology of the performer and the nature of the learner, instrumental pedagogy, and basic instructional techniques are all courses which would be considered basic for any student pursuing a degree program with a major in instrumental music education. The conducting sequence, then, must incorporate the basic knowledge gained from studies in these areas into a logical body of instruction which relates them to the prescribed needs of the conductor. The conducting curriculum can serve to draw attention to the knowledge needed by the conductor rather than serving as the major purveyor of such knowledge.

Instructional time, however, is still a major problem. Even if we take just those items listed above that are “traditionally” included in most conducting texts, as well as most standard undergraduate conducting curriculums, finding the classroom time to teach each one effectively is still a problem. Baton technique, use and development of the left hand, effective body language and non-verbal communication, score reading skills, score analysis and study techniques, error detection skills, and effective rehearsal techniques are all areas of great importance to the conductor that are traditionally the province of the conducting curriculum. These areas alone demand a great deal of instructional time, individual attention, and podium time in front of a live ensemble. Donald Hunsberger, prominent contemporary conductor and author of his own textbook (1983),
emphasizes the need for an examination of the college conducting curriculum:

The improvement of college conducting classes is a matter of widespread concern, particularly since a large percentage of graduates use their conducting skills extensively during their careers and many - perhaps most - will receive no additional formal instruction. The number of students who need to receive individual instruction in a limited amount of class time seems inevitably to make accomplishments too limited. (p. v)

Suggestions such as those by Long (1971) and Weller (1987) calling for prerequisites to the conducting sequence are helpful, but do not eliminate the need for basic instruction in the listed conducting skills. If one addressed nothing but these skills, time would still be a limiting factor.

NASM (1987) suggests two semesters of conducting in the undergraduate curriculum. CBDNA (1977) suggests additional "live" conducting opportunities. Zirkman (1984) calls for additional specialized conducting classes and more required hours in conducting for music education majors. Yet, it is unusual and generally impractical, given the abundance of credits already required for most music degree programs, to include more than two semesters or three quarters of undergraduate conducting in the curriculum.
Given the time limitations of the undergraduate conducting sequence and the scope of instructional activities that could be included in the sequence, it makes sense to seek more efficient ways of structuring the undergraduate conducting curriculum. If instructional time can be put to the best use, and alternatives to actual in-class instruction developed, the basic expectations of the curriculum might be better met.

In recent years, the use of videotape to provide student conductors with visual feedback on their conducting has become more widespread, due to the availability and affordability of video equipment coupled with substantial research on the benefits of videotaped feedback (Furman, 1984; Gonzo & Forsythe, 1976; Jordan, 1980; Keller, 1979; Moore, 1976a; Yarbrough, 1978; Yarbrough, Wapnick, & Kelly, 1979). This has saved much instructional time in the classroom, eliminating the need for the instructor to verbally comment on each student's performance.

Research also exists which demonstrates the ability of students to learn basic skills through the use of various types of modeling (Bandura, 1977; Bandura and Walters, 1963; Brand, 1977; Kelly, 1987; Lebon, 1986; Michelson, 1984; Rosenthal, 1984; Sang, 1987). It would seem to be a reasonable assumption that the combination of these two areas – videotape and modeling – would serve the potential conductor well, allowing the student to observe correct conducting gestures on videotape, outside of the
classroom, and to model those gestures with an eye toward improving personal conducting technique. Of further interest is whether this videotaped modeling must be guided by verbal explanation and instruction, or whether modeling alone is effective in providing the student with the necessary skills. Yet, little research has been conducted in the area of videotaped modeling as it applies to the conducting student, or in the area of guided versus unguided modeling for conductors.

Sousa (1988) notes that if one examines the majority of popular conducting texts, there seems to be “a common agreement among them concerning a basic conducting technique” (p. 2). If there are certain basic techniques or gestures that most instructors agree that a beginning instructor should master, then perhaps this is the point where an examination of the use of different types of modeling should begin. Scherchen (1940) insists that “a technique of conducting does exist, and can be learnt and practised down to the smallest details before a student first attempts to conduct an orchestra” (p. 4). Providing the student with an expert model may well enhance his or her progress in this regard.

Purpose of the Study

The purpose of this study was to compare the effects of guided modeling and unguided modeling on the acquisition of five basic conducting skills by beginning conductors. These five basic skills included posture and
baton position, the preparatory beat, rebound, releases, and legato style. The study examined two types of modeling – one with a visual model accompanied by detailed verbal instructions (guided modeling) and the other with visual model only (unguided modeling). If, in fact, either type of modeling is shown to be more effective in helping the conducting student develop several basic physical conducting skills, then similar tapes might provide an important supplement to in-class instruction on physical technique. Such time might then be better spent on other aspects of the conducting sequence, such as score study and rehearsal techniques.

The Research Hypothesis

It is hypothesized that there will be a significant difference in the performance of five select basic conducting gestures between beginning college conducting students who are exposed to guided videotaped modeling and those who are exposed to modeling only videotapes.

The Null Hypothesis

There will be no significant difference in the performance of five select basic conducting gestures between beginning college conducting students who are exposed to guided videotaped modeling and those who are exposed to modeling only videotapes.
**Definition of Terms**

The following terms are defined to reflect their use and relevance in this study:

**Feedback** - the process by which a conducting student receives knowledge or information concerning the correctness of a conducting behavior that has been performed by said student. Such information may come in the form of verbal or written commentary, or through the observation by the student of his or her performance on videotape.

**Modeling** - the presentation (live or recorded) of any behavior which may later be imitated to a subject. The subject imitating the model is then in the process of modeling. For the purposes of the current study, all five conducting behaviors to be modeled will be presented on videotape.

**Guided Modeling** - presentation of the behavior to be imitated visually on videotape, accompanied by a verbal commentary or description. In this study, the commentary and descriptions are a part of the videotape soundtrack.

**Unguided Modeling** (model only) - presentation of the behavior which is to be imitated through visual means only, without any commentary or explanation on the videotape.
**Undergraduate Conducting Curriculum** - those courses of instruction at the college or university level specifically designated as a part of the conducting sequence of instruction for undergraduate students.

**Field of Conducting** - the area in front of the body into which conducting gestures comfortably fall. It is defined on the bottom by the established ictus table, on the top in general by eye level, and on the sides by a comfortable extension of the arms. The goal is to keep conducting gestures to a reasonable size, and generally within the conducting field so as to maximize readability and visibility.

**Ictus** - the indication of the precise instant of the rhythmic pulse of the beat: the beat-point.

**Ictus table** - the lower terminus of the conducting pattern, the level at which the indications of the beat points should fall.

**Basic Conducting Skills** - For the purpose of this study, the following physical conducting gestures or behaviors will be referred to as basic conducting skills:

1. **Posture and Baton position** - the body is straight and erect, weight evenly distributed between both feet. The baton is held parallel to the ground, focused toward the center. The
baton is held between the tip of the thumb and the first joint of the index finger, with the heel of the baton in the hollow of the palm. The fingers are closed around the heel of the baton. The palm is facing the ground. Elbows are away from the body, at approximately a five o'clock and seven o'clock position, and the arms are extended slightly forward. The baton should be an extension of the forearm.

2. **Preparatory Beat** - the motion of the baton by the conductor to signal the ensemble to prepare to perform. It must take the time of exactly one beat of the time-beating gestures to follow. It must be in the proper direction (which, for the purposes of this study, is in a straight line directly upward from the ictus table), and reflect the style and dynamics of the music to follow. Good eye contact with the ensemble and impulse of will are essential.

3. **Rebound** - the reflex travel of the baton after the beat or ictus. It should be no more than half the height of the initial preparatory beat of the measure, and centered in the hand and wrist.

4. **Release** - the gesture performed by the conductor to stop the sound. It should be clear, succinct, and in the style in
which the ensemble has been playing. For this study, a circular style release will be used, with the stick starting at the ictus table, moving in a counterclockwise circle and returning to the release point at the ictus table. The gesture should take one metric unit of time. The left hand may mirror the right hand for added clarity.

5. **Legato Style** - smooth, flowing connection from ictus to ictus. Curved motions are typical of this style, with very few straight lines. Ictus points are indicated by the change in direction of the baton travel. Care must be taken to avoid obscuring the ictus, and to emphasize horizontal motion as opposed to vertical motion in the stick travel. For the purposes of this study, a four beat pattern is employed to demonstrate legato style.

**Limitations of the Study**

This study will be limited to investigating the effects of videotaped modeling on the following basic conducting skills: (a) posture and baton position, (b) preparatory beat, (c) rebound, (d) release, and (e) legato style.

The subjects used in this study were limited to the students enrolled in Music 262.11 - Basic Conducting - during the Autumn 1988 Quarter at
The Ohio State University. The findings and implications of this study are limited to the population sample.
CHAPTER II

REVIEW OF THE LITERATURE

There are three basic areas of knowledge or information that have a direct bearing on the current study: research in the area of conducting technique, particularly in the teaching of basic conducting technique, research in the area of the use of videotaped feedback to help conducting students study and improve their conducting gestures, and research into the use and effect of various types of modeling as a means of improving student performance in some basic skill area. The purpose of the following chapter is to summarize the pertinent existing literature and research findings in music-related studies.

The Study of Conducting Technique

The art and technique of conducting is a concept nearly as old as music itself. Morosic (1978) found evidence of conducting dating back as far as 2800 B.C., and noted that the function of a leader using sign language to convey ideas to performers has remained constant throughout history.
A cursory examination of most conducting texts will indicate that, while each may have its own particular area of emphasis, few, if any, dispense totally with a discussion of manual technique. As stated by McElheran in his text on conducting (1966):

Many conductors fail to realize the importance of conducting technique itself. They accept sloppy entrances or choppy legatos, blaming the poor quality of their musicians, whereas the trouble is probably caused by their own right arms. They study scores before a rehearsal but never practise conducting; this is like a pianist analyzing a concerto and working out the fingerings but never playing it except with an orchestra. Conducting technique must be studied and practised, during the entire career of a conductor (p. 9).

Elizabeth Green (1981) notes that the baton has become "the most efficient means of conveying a precise message to the players, if its technique has been mastered" (p. 7). Rudolph (1980) emphasizes that "the appropriate gesture for each musical expression must be mastered before we can speak of conducting" (p. xvi).

Given this agreement on the importance of technique, the problem remains of how to effectively teach such technique. Nearly all of the texts examined make use of some type of diagram of the basic conducting patterns with accompanying explanations. Rudolph (1980) takes this approach to even more of a science by overlaying his diagrams on a grid,
where each square on the grid represents a scale of one square inch. Thus "the enlarged diagrams, drawn on either a sheet of paper or on a blackboard, will make it possible for the student to practice with a life-sized beat" (p. xvi).

In an examination of eighteen select college conducting programs, Zirckman (1984) found that all of the programs worked extensively on teaching conducting techniques, and that published conducting texts were generally used for undergraduate instruction. An examination of the numerous conducting books in use, most of them written since 1950, indicates the consistency of the goal of teaching technique:

The literature on conducting consists mainly of many books that take the form of textbooks for beginning conductors. Almost all of these books concentrate on overt gestures that a conductor must have in order to transmit clear communication from the conductor to the performers. (Ervin, 1975, p. 13)

Noteworthy as well is the consistency with which the authors of the various conducting texts approach the description and definition of the basic conducting gestures:

Recognized basic conducting principles have been set forth in a majority of conducting textbooks. For example, most textbooks agree that correct beat patterns, the indication of style and dynamics through appropriate conducting gestures, eye contact, and accurate cueing gestures are of fundamental importance. Though there are some minor differences, these
texts are consistent in their discussion of appropriate preparation and release gestures as well as correct indication of style and dynamics". (Yarbrough, Wapnick, & Kelly, 1979, p. 104)

The perfection of conducting technique, then, is a matter of accepted concern. Ostling (1977) provides encouragement, noting that "aspects of the art of conducting may be learned as acquired skills of nonverbal patterns of behavior which might not exist in one's natural repertoire of nonverbal behavior" (pp. 36-37). Grechesky (1985) opines, in his study of the relationship between verbal and nonverbal conducting behaviors and their relationship to expressive musical performance, that conductors who sharpen their nonverbal communication skills can have a very positive effect on their group's musical performance. Sousa (1988) notes as well that "some of the ensemble problems relating to tempo and dynamics may be inherent in the gestures that conductors use" (p. 90).

An important aspect of Sousa's research is the fact that basic conducting gestures as they appear in standard conducting texts and as validated by professional conductors are not always understood by performers. Of the gestures employed in the current study, preparations seemed to give instrumentalists the most problem. Sousa also notes that the younger the instrumentalist, the more difficulty they have in recognizing all of the employed gestures. Thus, not only must the
conductor be effective in his employment of the variety of meaningful conducting gestures, but he must sensitize his ensemble to the intended meaning of his conducting gestures.

Success in the field of conducting, then, seems to relate in a large part to the gestural effectiveness of the individual conductor. The task now becomes one of finding the most effective way to teach students of conducting the necessary "gestural vocabulary".

The Use of Videotape Feedback

The advent of videotape recording in the early sixties was an event destined to change the course of education. As the machines became more refined and easy to use, as well as more affordable, schools across the country began developing programs to take advantage of their ability to film students' activities for immediate playback.

In the field of music, numerous study results showed the advantage of using videotape feedback to supplement classroom instruction. Furman (1984) found the technique useful in helping students develop the ability to lead group singing with a guitar accompaniment. Nelson (1980) and Simpkins (1980) found videotaped feedback useful in helping elementary music education students develop successful teaching techniques. Moore (1976a) found that the use of videotape feedback coupled with self-evaluation forms was an effective means of training prospective
elementary teachers in the use of the various music teaching skills they need to be familiar with in order to be effective in teaching musical concepts in their classrooms.

There has been substantial research conducted specifically in the area of videotaped feedback in the teaching of basic conducting. Fleming (1977) found that students who recorded private practice conducting sessions and self-evaluated these sessions performed better when asked to conduct a live ensemble. Keller (1979), Price (1985), Yarbrough (1978 and 1987), and Yarbrough, Wapnick and Kelly (1979) all discovered that videotaped feedback on conducting practicums was valuable in helping students develop conducting skills. In particular, Price and Yarbrough noted that a system of competency-based instruction where the student's self-observation was aided by behavioral self-assessment forms and systematic self-observation was even more successful than undirected self-observation. Of particular importance to this study is the finding of the Yarbrough, Wapnick, and Kelly study, where student self-observation was determined to be as effective as traditional forms of feedback from the instructor in helping students develop basic conducting skills.

One other avenue of feedback that might be included here was discussed in a study by Schwaegler (1984) in which a computer program was developed that analyzed a student's baton pattern shape and
steadiness, and provided immediate feedback on those items based on a predetermined norm. The program could also be set to provide music which directly responded to the student's beat. This area of computer-assisted instruction and feedback is one which offers interesting possibilities in the instruction of beginning conductors.

**Modeling and Simulation Techniques**

Bandura (1969) cites modeling as one of the "fundamental means by which new modes of behavior are acquired and existing patterns modified" (p. 118). Research has shown that human beings learn much more from example than through any other means:

New responses may be learned or the characteristics of existing response hierarchies may be changed as a function of observing the behavior of others and its response consequences without the observer's performing any overt responses himself or receiving any direct reinforcement during the acquisition period. In some cases, the amount of learning shown by the observer can, in fact, be as great as that shown by the performer. (Bandura and Walters, 1963, p. 47)

In the area of music, several important studies have shown the benefit to students in observing and modeling desired behaviors. Gonzo and Forsythe (1976) videotaped choral performance groups and used the tapes in a variety of ways to teach segments of choral conducting and
introductory music education courses. They found that the videotapes not only reinforced subject materials, but served to help the students maintain interest in the material. Michelson (1984) found videotaped examples of conductors using a teaching technique known as Stimulus Variation in rehearsal situations were more beneficial than lectures in helping choral conducting students learn to identify the technique.

Saker (1982) developed videotapes that simulated various behavior management problems that band instructors might be expected to deal with, and discovered that the videotapes led to a greater confidence among the participants in handling such problems. Walters (1972) and Brand (1977) have shown that simulated encounters with behavior management problems in the music classrooms helped students develop better responses to such problems than did the traditional lecture format. Moore (1976b) noted that students who observed teaching models in addition to hearing lectures and class discussions developed superior teaching skills.

While these studies concerning simulation techniques do shed light on the positive effects of modeling, instances of individual modeling of a particular musical skill have a more direct bearing on the current study. Rosenthal (1984) showed in her experiments with upper-level college brass and woodwind performance majors that model only instruction gave results superior to those of guided model, guide only and practice only
groups. The guided model tape gave sample performances of the selection to be modeled accompanied by a voice-over that pointed out important considerations in the performance such as style, tempo, phrasing, and dynamics. The model tape consisted of the performance only, while the guide tape consisted of a verbal soundtrack only which mentioned various important points to consider during practice. The implication is that direct modeling, without any added verbiage, may be most effective in helping a student perform accurately. Zurcher (1985) found that model-supported practice using a cassette tape as the model have a positive effect on the improvement of beginning brass students.

Research also supports the use of videotaped models. Kelly (1987) showed that videotaped models were equally as effective as live models in developing selected music teaching skills in pre-service teachers. Lebon (1986) determined that having vocalists work with videotapes that demonstrated a singing style known as the “belted technique” aided significantly in their ability to recognize this particular style when confronted with examples of it in a performance situation. Jordan (1980) compared students who were exposed to videotaped supplementary instruction on conducting gestures to students who were given access to printed materials only. He found that the videotaped supplements had a
positive effect on students' attainment of effective cuing and fermat gestures.

Several final issues concerning the effectiveness of modeling as it relates to the current study are mentioned here. The first concerns the ability of individuals to learn from observation. On this point, Bandura emphasizes:

People cannot learn much by observation unless they attend to, and perceive accurately, the significant features of the modeled behavior. Attentional processes determine what is selectively observed in the profusion of modeling influences to which one is exposed and what is extracted from such exposures. (1977, p. 24)

In the area of conducting, continued classroom instruction could be effective in providing the focus and discrimination students need to effectively learn from videotaped modeling.

Secondly, the aspect of retention of the modeled behavior comes into question. Ongoing practice of the behavior seems essential in this retention process.

Among the many variables governing retention processes, rehearsal operations effectively stabilize and strengthen acquired responses. The level of observational learning can, therefore, be considerably enhanced through practice or overt rehearsal of modeled response sequences, particularly if the rehearsal is interposed after natural segments of a larger modeled pattern. Of greater import is evidence that covert
rehearsal, which can be readily engaged in when overt participation is either impeded or impracticable, may likewise enhance retention of acquired matching responses. (Bandura, 1969, p. 139)

Finally, the role of incentives in the modeling process are important. Students should be given strong incentives for developing the particular behavior in question. Bandura (1969) notes that “when positive incentives are introduced observational learning is promptly translated into action” (p. 142).
CHAPTER III
PROCEDURE

The purpose of this study was to compare the effects of guided modeling and unguided modeling on the acquisition of five basic conducting skills by beginning conductors. As previously defined, guided modeling involves the visual presentation of the five basic conducting skills on videotape, accompanied by a verbal commentary or description. Unguided modeling (model only) presents the same five basic conducting skills on videotape in visual form only, without commentary or description.

In order to realize the purpose of the study, the following procedural steps were followed: (a) subjects for the study were selected and randomly assigned to one of two treatment groups, either guided modeling or unguided modeling; (b) two treatment tapes were prepared for use in the study using a professional conductor as demonstrator (one tape contained guided modeling of the five basic conducting skills, the other tape contained unguided modeling of the same skills); (c) students were exposed to their assigned treatments for a period of six weeks; (d) students were
post-tested using a conducting exercise designed to allow each student to demonstrate his or her level of acquisition of the five basic conducting skills; (e) a panel of experts reviewed videotapes containing the post-test performances of each student, and rated each individual student on his or her acquisition of the five basic conducting skills by means of a "Basic Conducting Skills Evaluation Form" which was created using a ten-point Likert scale to rate each individual skill.

Subjects

The subjects for this study were conducting students at the Ohio State University in Columbus, Ohio; specifically, those students enrolled in Music 261.11 Beginning Conducting at Ohio State University during the Autumn Quarter of 1988. This course met in two sections, an 8:00 a.m. section and a 2:00 p.m. section, each with a different instructor. Since participation in this study required a certain investment in time outside of the normal class hours, it was felt that better cooperation would be elicited from participants if they were given the choice of participating in the study rather than being required to participate. The instructors involved with the Beginning Conducting classes were of the opinion that participation in the study should be voluntary, so the researcher proceeded under that restriction.
All of the students enrolled in Music 261.11 were invited to participate in the experiment. The researcher visited both sections of the class during the second week of the Autumn Quarter, distributing a letter of invitation (Appendix A) to participate in the study. A brief explanation of what would be required of the participants in the study was given, and any questions were answered. At no time did the researcher give any details as to the basic purpose of the study or the specific content of materials related to the study.

All students who were interested in participating in the study were asked to fill out an information sheet (Appendix B) which asked for some basic background on the student, information on whether or not the student had any formal instruction or experience in conducting, and a signature indicating their consent to participate in the study.

Out of a total of thirty-seven (37) students in the two classes, thirty-one (31) students agreed to participate in the study. This included fourteen students from the 8:00 a.m. class and seventeen students from the 2:00 p.m. class.

Research Design

The purpose of this study was to compare the effects of guided modeling and modeling only on the acquisition of five basic conducting skills by beginning conductors. A posttest only design with two
experimental groups was employed. Since the research was concerned only with a comparison of two types of modeling, and to eliminate the possible confounding produced by the Hawthorne Effect, it was decided that a control group receiving no treatment would not be used in this study.

The experiment was based on a post-test only design, since each member of the beginning conducting classes indicated no previous training or formal experience in conducting. Any minor differences in inherent conducting ability would be balanced out in the random selection process. The experimental design was:

\[ R \times_1 0 \]

\[ R \times_2 0 \]

Assignment of students to each of the two experimental groups was done randomly within each of the two sections of the class. Since each section of Music 261.11 is taught by a different instructor, random assignment of students within each section was made to create as much balance in numbers as possible between each experimental group, and to control for any possible bias due to instructor differences.

Each experimental group was assigned a supplementary videotape to view outside of class time. Group A viewed a tape of the five selected basic conducting skills demonstrated by modeling only. Group B viewed a
tape of the same five basic conducting skills demonstrated by guided modeling.

Basic Conducting Skills

Five basic conducting skills were selected by the researcher to be included in this study: (a) posture and baton position, (b) preparatory beat, (c) rebound, (d) release, and (e) legato style. These skills were determined by the conducting faculty at Ohio State to indeed be basic conducting skills that were a part of the expected competencies of Music 261.11, and they are listed on the syllabus for the course that is given to each student. Descriptions of the basic physical movements necessary for a student to successfully accomplish each of the conducting skills were based on descriptions found in The Modern Conductor by Elizabeth Green (1981), the required textbook for Music 261.11, and are listed below:

1. Posture and Baton position - the body is straight and erect, weight evenly distributed between both feet. The baton is held parallel to the ground, focused toward the center. The baton is held between the tip of the thumb and the first joint of the index finger, with the heel of the baton in the hollow of the palm. The fingers are closed around the heel of the baton. The palm is facing the ground. Elbows are away from the body, at approximately a five o'clock and seven o'clock position, and
the arms are extended slightly forward. The baton should be an extension of the forearm.

2. **Preparatory Beat** - the motion of the baton by the conductor to signal the ensemble to prepare to perform. It must take the time of exactly one beat of the time-beating gestures to follow. It must be in the proper direction (which, for the purposes of this study, is in a straight line directly upward from the ictus table), and reflect the style and dynamics of the music to follow. Good eye contact with the ensemble and impulse of will are essential.

3. **Rebound** - the reflex travel of the baton after the beat or ictus. It should be no more than half the height of the initial preparatory beat of the measure, and centered in the hand and wrist.

4. **Release** - the gesture performed by the conductor to stop the sound. It should be clear, succinct, and in the style in which the ensemble has been playing. For this study, a circular style release will be used, with the stick starting at the ictus table, moving in a counterclockwise circle and returning to the release point at the ictus table. The
gesture should take one metric unit of time. The left hand may mirror the right hand for added clarity.

5. **Legato Style** - smooth, flowing connection from ictus to ictus. Curved motions are typical of this style, with very few straight lines. Ictus points are indicated by the change in direction of the baton travel. Care must be taken to avoid obscuring the ictus, and to emphasize horizontal motion as opposed to vertical motion in the stick travel.

**The Modeling and Guided Modeling Videotapes**

Two videotapes were developed for use in the current experiment. One tape contained demonstrations of the five basic conducting skills using modeling only. The other tape contained demonstrations of the five basic conducting skills accompanied by verbal instructions. The same conductor was used to demonstrate each of the skills on both tapes. The conductor videotaped is an established instrumental conductor with more than fifteen years of professional conducting experience.

The videotapes used in this study were filmed using a Panasonic Model NV8350 Stereo VHS Videodeck with Dolby sound, a Panasonic Model WV-3230 Newvicon color video camera, and a Sure Model 5335B Spherodyne Omnidirectional Dynamic Microphone.
Videotape A was prepared as the Unguided Modeling Tape. It contains silent demonstrations of each of the five conducting skills to be evaluated. A description of each of the five conducting skills as portrayed on the videotape follows:

1. **Posture and Baton Position** - The model is standing with arms at side. Movement from this position to the basic conducting position is demonstrated three times. The camera then focuses on the baton hand, zooming in for a close-up look at the hand position. The model then demonstrates placing the baton in the hand and the formation of the proper grip. The demonstration is repeated. Finally, the move from a position of rest to the basic conducting stance is repeated, and the camera pans the full body length from feet to upper torso to show complete stance and baton position and to enable the student to obtain a complete picture of the conducting stance. The segment time is one minute and forty-five seconds (1:45).

2. **Preparatory Beat** - The model is in the basic conducting position with arms at the ready position. The camera is focused on the upper torso of the model. The model gives a click at the ictus table, raises arms straight away from the
table in a smooth vertical motion, and returns to the table.

This movement is repeated three times, then, after a brief
pause, repeated three more times. Total time of this segment
is one minute and fifteen seconds (1:15).

3. **Rebound** - The model has baton hand at the ready position.
Only the baton hand is used to focus attention on the stick.
The camera is focused on the upper torso of the model. A
four-beat pattern is used for the demonstration, with a
definite click at each ictus point. The pattern is run
continuously for a five-measure period, then repeated after a
brief pause. Total time of this segment is one minute and
twenty-five seconds (1:25).

4. **Release** ~ A circular release is used for this demonstration.
The camera is focused on the upper torso of the model. The
model begins with a preparatory gesture, returning to the
ictus plane. A circular, counterclockwise release gesture is
then performed in tempo, using both hands. The gesture is
repeated three times, followed by a brief pause, after which
the gesture is repeated three more times. Total time of this
segment is fifty-five seconds (.55).
5. **Legato Style** – A four-beat pattern at a tempo of approximately 52 beats per minute is used. A smooth, rounded pattern is emphasized. Four measures of legato pattern are demonstrated, followed by a pause and four more measures of the pattern. Total time of this segment is one minute and twenty-three seconds (1:23).

Videotape B, which will be called the Guided Modeling Tape, contains the same demonstrations of each of the five conducting skills to be evaluated. To accompany the modeled skills, the model adds a verbal explanation of the movements and steps necessary to perform the modeled gesture, as well as suggestions and concerns of which the student should be aware. A complete transcript of the verbal commentary on this tape is included in Appendix C.

Each of the five segments on both tapes is preceded by a title panel, which indicates the particular conducting skill to follow, and a voice-over. This voice-over encourages the student to study the demonstration and attempt to model his or her own conducting efforts after the demonstration. Students are encouraged to repeat the segment as often as necessary until they are comfortable with the gesture. A voice-over at the end of each segment indicates that the section is finished and asks the student to rewind the tape when the session is finished. There are
approximately 30 seconds of blank space between each segment. All voice
overs on each of the tapes are identical.

To help avoid confusion, Videotape A and all materials connected with
it were labeled in red, and Videotape B and all materials connected with it
were labeled in blue.

A four-member review panel consisting of four conducting instructors
(not including the instructors of the Basic Conducting Classes) reviewed
both tapes and unanimously found them to be accurate portrayals of the
basic conducting gestures in question.

The Treatment

Participating students in each section of Music 261.11 were randomly
assigned to Experimental Group A (Model only) or Experimental Group B
(Guided Model). Assignments were made using each class as an intact unit.
There were 31 participants in the study (N=31), with fourteen students
from the 8:00 a.m. class and seventeen from the 2:00 p.m. class. Sixteen
students were assigned to Group A (seven from the 8:00 a.m. class, nine
from the 2:00 p.m. class), and fifteen students were assigned to Group B
(seven from the 8:00 a.m. class, eight from the 2:00 p.m. class).

During the fourth week of class, students were informed of their
group assignments and given verbal and written instructions (see Appendix
D) on how their participation in the study would proceed. Detailed
instructions on the tape sign-out procedure were presented, with an emphasis on the need to carefully follow all instructions. The treatment did not begin until the fourth week in order to allow students to become settled in the classroom setting and to acquire some basic rudimentary knowledge concerning the art of conducting from the classroom instructors.

The videotapes were kept in the Music Teaching Center, a room that serves as a resource area for music education students. An area is provided in this center where materials can be kept on reserve, away from any direct access to the students. Four identical copies of each tape were kept in this reserve area behind the librarian's counter. Tapes were clearly labeled for either Group A or Group B, and were color coded as previously discussed. A three-ring binder, also color-coded, was kept for each experimental group. Each binder contained a copy of the student instruction sheet, a set of directions for the librarian, and a grid sheet for each student who was a member of that particular group. The grid sheet contained spaces for the student to sign his or her name, and to indicate the date, the tape number signed out, the time the tape was signed out, and the time the tape was signed back in. A space was also provided for the librarian to initial the transaction. Care was taken to explain the procedures to each of the Music Teaching Center librarians and to indicate
the need for accuracy in following the procedures. The researcher made regular observations of the process to insure the proper operation of the system.

Both experimental groups received regular classroom instruction based on the syllabus for Music 261.11 (see Appendix G). No attempt was made by the researcher to control the content or type of presentations made by the instructors in either section of the class. Classroom instructors were not permitted to view the videotapes at any time during the quarter in order to avoid biasing the type of classroom instruction that was being administered, and to prevent any inadvertent efforts by the instructors to provide help to the individual students concerning specific items on the videotapes.

Students were asked to begin watching the tapes during the fifth week of the quarter. This allowed for six weeks of experimental treatment. No attempt was made to enforce any type of minimum viewing time by the students. Students were urged to view the tapes as often as necessary to become comfortable with the demonstrated skills. The researcher kept track of the viewing time of each student as indicated on the grid sheets in each binder, and regular reminders were made by both the researcher and the instructors in each of the class sections to maintain regular viewing habits. Both groups watched the videotapes individually, outside of regular
class time. The Music Teaching Center was open during evenings and weekends to insure reasonable access to the tapes.

In the verbal and written directions given to the students at the outset of the study, as well as in the voice-overs contained on each tape, students were urged to bring their batons along with them to each video session and to attempt to perfect each skill demonstrated on the tape. Emphasis was placed on the concept of practicing with the tape rather than just casual, non-participative viewing of the tapes. Students were urged to view the tapes individually rather than in groups. In addition, students were videotaped at regular intervals as a part of their normal classroom instruction, and could analyze their personal tapes against the model tapes as a means of checking their progress.

Students were told that their viewing habits would not directly affect their grade for Music 261.11. However, it was indicated that the skills they would be developing through working with the videotapes would certainly be beneficial to them in preparing for their final exam in the course, where they would be asked to conduct a live excerpt demonstrating their command of the basic conducting skills.

Evaluation Form

A Basic Conducting Skills Evaluation Form (see Appendix E) was developed to evaluate student performance on each of the conducting skills
during the post-test. The form lists each of the basic conducting skills to be evaluated, including several sub-points in some categories to specify activities within each skill that should be considered, accompanied by a ten-point Likert Scale for each skill. Evaluators viewed the videotaped performance of each student participant on the basic conducting skills in question, and rated each student on his or her performance.

The Basic Conducting Skills Evaluation Form was presented to the panel of experts for review to establish validation and was unanimously accepted.

Post-test Evaluation

At the end of the six week experimental period, each of the students in both of the experimental groups were videotaped as they conducted a post-test exercise. This exercise also served as the final exam/jury for Music 261.11, thus insuring a certain degree of preparation and seriousness toward the activity on the part of the individual students. Each section of Music 261.11 met as a separate, intact group for this exercise. The music selected for use in this post-test was a Bach chorale, titled *Wie schon leuchtet der Morgenstern (O Morning Star! How Fair and Bright)*, taken from the collection arranged by Mayhew Lake (1938). Appendix F contains a copy of the music as it was given to the students. The instrumentalists as well as the conductors performed from this page rather than individual parts.
This chorale setting was selected because the nature of the music allowed each student to exhibit each of the five basic conducting skills in the context of a live musical performance. The music selected was approved by the review panel and conducting faculty as being suitable for the purposes of this exercise. Students were given time in their individual classes during the final week of the quarter to practice conducting the exercise in front of the class ensemble, and were permitted to videotape these practice sessions if they so desired.

Each student conducted an ensemble consisting of the members of their class for this exercise. The performance took place in an auditorium in the School of Music, on stage, with the performers arranged in a reasonable concert position. The order of the conducting performances was randomly selected.

It should be noted here that only those students who actively participated in the experimental treatment were used for the final evaluation process. During the course of the treatment period, one student in Group A and one student in Group B dropped the class. In addition, two students in Group A and two students in Group B failed to spend any time viewing the modeling tapes, and were thus eliminated from the experiment. This reduced the total number of participants in the study to twenty-five (N=25), with thirteen students in Experimental Group A and twelve
students in Experimental Group B. Because of the individual nature of the experiment, and the coincidental balance in the group assignments of those students who were excluded, this reduction was not considered a confounding variable in the experiment.

A videotape was made of each student's conducting performance, using the same video equipment that was used to prepare the original modeling tapes. The camera was placed to the rear of the ensemble and focused on each student so as to clearly show all bodily movements from the waist upward. Care was taken to include each student's entire field of conducting in the picture.

At the conclusion, the videotapes of the students from each section of Music 261.11 were edited to include only the actual conducting performance of each student. Subsequently these segments were copied onto one 1/2 inch VHS videotape. Approximately 30 seconds of space was placed between each performance on the tape. Four copies of the final tape were made and checked for quality. One copy was given to each member of the review panel, along with a Basic Conducting Skills Evaluation Form for each student on the tape.

Every effort was made to insure that each evaluator understood the meaning of the evaluation form and its proper use, and had a clear understanding of all five of the basic conducting skills. Each member of
the review panel was given a copy of Videotape A and Videotape B and urged to review these tapes again for specific content. A written instruction sheet (Appendix H) was also given to each evaluator with his materials. The panelists were then asked to evaluate each student on the tape using the Basic Conducting Skills Evaluation Form. This form asked the panelists to rate the student on his or her performance of each of the five basic conducting skills, using a ten-point Likert Scale. A rating of ten was considered outstanding, a rating of one was considered poor. Panelists were specifically asked to rate each student based on his or her performance of each basic conducting skill as it compared to what was demonstrated on the modeling videotapes. Only those basic skills were to be judged, and panelists were asked to focus on these rather than the conducting excerpt as a whole. A written instruction sheet (see Appendix H) was included with the forms and tapes, along with extra blank evaluation forms.

After a suitable interval of time which allowed panelists ample opportunity to view and rate the individual performances, the rating sheets and tapes were collected and the data submitted to statistical analysis.
CHAPTER IV
PRESENTATION OF THE DATA

The purpose of this study was to compare the effects of guided modeling and unguided modeling on the acquisition of five basic conducting skills by beginning conductors. These five basic skills included posture and baton position, the preparatory beat, rebound, releases, and legato style. The study examined two types of modeling – one with a visual model accompanied by detailed verbal instructions (guided modeling) and the other with visual model only (unguided modeling).

The data collected and reported in this chapter include the following areas: (a) interobserver agreement; (b) judges' ratings of subjects' conducting performance on each of the five basic conducting skills; and (c) statistical comparisons of Group A (modeling only) with Group B (guided modeling) on each subject's performance of each of the five basic conducting skills. The statistical tests were computed using the Statistical Packages for the Social Sciences program (SPSS-X), Version 3.0 for the IBM OS/MVS.
Interobserver Agreement

A panel of four expert judges viewed and rated a videotaped performance by each of the subjects in this study. This performance, which was videotaped at the end of the six-week treatment period, was designed to allow the subjects to demonstrate their individual achievement level on each of the five basic conducting skills. The four expert judges viewed the performance of each of the students and rated that performance using the Basic Conducting Skills Evaluation Form (Appendix E) which was developed for use in this study. The form asks each judge to rate an individual subject's performance in each of the five skill areas by means of a ten-point Likert scale, with a rating of "1" indicating a poor performance and a rating of "10" indicating an outstanding performance. The resultant ratings were then tabulated and used to establish interobserver agreement levels.

Interobserver agreement for this study was calculated by dividing the number of agreements by the total number of agreements plus disagreements. A special "double agree - double disagree" system was employed for use in calculating interobserver agreement in this study. It was believed that such a system would allow for a more realistic accounting of the judges' opinions in the difficult area of rating human conducting performances than one might expect from a strict "matching
numbers" approach typical of standard statistical tests of reliability. This "double agree - double disagree" system required the grouping of the ten-point Likert Scale used by the judges into five sections or "boxes" as shown in Figure 1.

```
1 2 3 4 5 6 7 8 9 10
```

Figure 1

*Likert Scale Groupings for Interobserver Agreement*

A double agreement, worth two agreement points, was achieved when two judges circled a rating that was contained within a box in Figure 1, for instance a 3 and a 4, or a 7 and an 8. A single agreement, worth one agreement point, was awarded when two judges circled ratings that were contained in neighboring boxes in Figure 1, such as an 8 and a 10, or a 6 and a 7. If the ratings of two judges were contained in boxes separated by one box, such as a 4 and a 7 or a 2 and a 5, a single disagreement, worth one disagreement point was reached. A double disagreement, worth two disagreement points, was achieved when the ratings circled by the judges were separated by two or more boxes, as in ratings of 4 and 9 or 1 and 8. Using this method, the composite agreement level among the four expert
judges was calculated at 77.4%. Table 1 contains the agreement levels as they varied by individual conducting skills (posture and baton position, preparatory beat, rebound, release gesture, and legato style).

Table 1

*Interobserver Agreement By Skill: Posture and Baton Position (P), Preparatory Beat (B), Rebound (Rb), Release (Rl), and Legato Style (L)*

<table>
<thead>
<tr>
<th></th>
<th>P</th>
<th>B</th>
<th>Rb</th>
<th>Rl</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>82%</td>
<td>76%</td>
<td>78%</td>
<td>72%</td>
<td>79%</td>
</tr>
</tbody>
</table>

It is interesting to note the variation in agreement levels for the five basic conducting skills. Posture and baton position, arguably the least complicated of the factors to observe, had in fact the highest agreement level (82%), while the preparatory beat and, in particular, the release gesture seemed to be the most difficult to accurately observe. A complete list of all of the judges’ ratings for each of the five basic conducting skills may be found in Appendix I, Tables 5 through 9. Summary data on these ratings are given on the following page in Table 2.
Table 2

Summary Data on Judges' (N=4) Ratings of Subjects' (N=25) Performance of the Five Basic Conducting Skills, Listed by Skill and Treatment (Treatment A = modeling only, Treatment B = guided modeling)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>* Subjects</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skill 1 - Posture and Baton Position:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>13</td>
<td>6.8462</td>
<td>0.949</td>
<td>0.263</td>
</tr>
<tr>
<td>B</td>
<td>12</td>
<td>6.4583</td>
<td>1.117</td>
<td>0.323</td>
</tr>
<tr>
<td><strong>Skill 2 - Preparatory Beat:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>13</td>
<td>5.9423</td>
<td>1.284</td>
<td>0.356</td>
</tr>
<tr>
<td>B</td>
<td>12</td>
<td>5.9167</td>
<td>1.762</td>
<td>0.509</td>
</tr>
<tr>
<td><strong>Skill 3 - Rebound:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>13</td>
<td>6.1731</td>
<td>1.156</td>
<td>0.321</td>
</tr>
<tr>
<td>B</td>
<td>12</td>
<td>5.8333</td>
<td>1.104</td>
<td>0.319</td>
</tr>
<tr>
<td><strong>Skill 4 - Release Gesture:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>13</td>
<td>5.0385</td>
<td>1.541</td>
<td>0.427</td>
</tr>
<tr>
<td>B</td>
<td>12</td>
<td>5.2500</td>
<td>1.331</td>
<td>0.384</td>
</tr>
<tr>
<td><strong>Skill 5 - Legato Style:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>13</td>
<td>5.7308</td>
<td>1.745</td>
<td>0.484</td>
</tr>
<tr>
<td>B</td>
<td>12</td>
<td>5.5000</td>
<td>1.310</td>
<td>0.378</td>
</tr>
</tbody>
</table>

Comparison of Treatments

The research hypothesis for this study proposed that there would be a significant difference in the performance of five select basic conducting gestures between beginning college conducting students who were exposed
to guided videotaped modeling and those who were exposed to modeling only videotapes. The null hypothesis thus stated that there would be no significant difference in the performance of five select basic conducting gestures between beginning college conducting students who were exposed to guided videotaped modeling and those who were exposed to modeling only videotapes. In order to determine the acceptance or rejection of the null hypothesis, $t$-tests were computed for each of the five basic conducting skills to determine if a significant difference in attained skill levels existed between the group receiving Treatment A (modeling only) and the group receiving Treatment B (guided modeling) in any or all of the five basic conducting skills (Table 2). A significance of $p < .05$ was determined to be necessary for a rejection of the null hypothesis. The total number of scores used in this analysis was twenty-five ($N=25$), with thirteen subjects included in Treatment A and twelve subjects included in Treatment B.
Table 3

*t-test For Treatment A (modeling only) and Treatment B (guided modeling) Scores on Conducting Post-test of the Five Basic Conducting Skills*

<table>
<thead>
<tr>
<th>Skill</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posture and baton position</td>
<td>0.93</td>
<td>21.71</td>
<td>0.362</td>
</tr>
<tr>
<td>Preparatory beat</td>
<td>0.04</td>
<td>20.01</td>
<td>0.967</td>
</tr>
<tr>
<td>Rebound</td>
<td>0.75</td>
<td>22.97</td>
<td>0.460</td>
</tr>
<tr>
<td>Release gesture</td>
<td>-0.37</td>
<td>22.91</td>
<td>0.716</td>
</tr>
<tr>
<td>Legato style</td>
<td>0.38</td>
<td>22.13</td>
<td>0.711</td>
</tr>
</tbody>
</table>

There was no significant difference at the *p* < 0.05 level between the treatments for any of the five basic conducting skills. As such, the null hypothesis was not rejected.

Although all of the assumptions for the use of the parametric *t*-test were in fact met by the data in this study, it was felt that perhaps additional insight into the nature of the results might be obtained by using a nonparametric test which would account for the ordinal nature of the data. As such, a Mann-Whitney U test was computed on the data (Table 4). This test is the nonparametric equivalent of the *t*-test, and relies on a rank ordering of the data to determine the relationship of the central tendencies of the two groups. Although less sensitive than the *t*-test, it is
useful in a study of human behavior such as this and could detect a
difference in the ranks of the two groups which might not be obvious in a
comparison of raw scores only. Table 4 shows the two-tailed \( p \) value
which has been corrected for ties. A \( p < 0.05 \) was deemed necessary for
rejection of the null hypothesis.

Table 4

*Mann-Whitney U Test For Treatment A (modeling only) and Treatment B
(guided modeling) on the Five Basic Conducting Skills*

<table>
<thead>
<tr>
<th>Skill</th>
<th>Mean Rank A</th>
<th>Mean Rank B</th>
<th>Z</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posture and baton position</td>
<td>14.15</td>
<td>11.75</td>
<td>-0.8195</td>
<td>0.4125</td>
</tr>
<tr>
<td>Preparatory beat</td>
<td>12.85</td>
<td>13.17</td>
<td>-0.1092</td>
<td>0.9131</td>
</tr>
<tr>
<td>Rebound</td>
<td>14.35</td>
<td>11.54</td>
<td>-0.9576</td>
<td>0.3383</td>
</tr>
<tr>
<td>Release gesture</td>
<td>12.42</td>
<td>13.63</td>
<td>-0.4090</td>
<td>0.6825</td>
</tr>
<tr>
<td>Legato style</td>
<td>12.85</td>
<td>13.17</td>
<td>-0.1092</td>
<td>0.9131</td>
</tr>
</tbody>
</table>

As with the \( t \)-test, no significant difference at the \( p < 0.05 \) level was
noted for any of the five basic conducting skills, so the null hypothesis
was not rejected.
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The art of conducting is a complex activity, requiring a great deal of personal scholarship in the area of musical history and performance practice, impeccable organizational skills, strong leadership qualities, and a solid command of the technical and musical skills necessary to adequately communicate with a performing ensemble. One could make a strong case for the necessity of each of these qualities in the pattern of instruction for the beginning conductor. Yet, it is the technical skills that seem to generate the most concern in the conducting curricula of our colleges and universities. This may well be due to the fact that the majority of space in the textbooks used by college conducting courses is occupied by material designed to teach and perfect conducting technique, and by the fact that it is the technical aspects of conducting that are probably the most easily codified and open to systematic analysis.

Whatever the reason for dwelling on conducting technique, conducting
instructors would no doubt find their task somewhat simplified should a reasonable method for improving this aspect of instruction be found and developed. Additional time might then be spent on teaching and perfecting the other qualities that play an important role in the formation of a fine conductor.

A review of the literature on the teaching of conducting shows numerous studies which have as their intent the discovery or verification of methods or approaches that will assist conducting students in improving their physical technique. A majority of these studies have focused on the area of videotaped feedback. Such feedback, where students videotape their conducting practicums and critically observe the results, has been shown to be an effective technique in the instruction of students on basic conducting skills (Keller, 1979; Price, 1985; Yarbrough 1978 and 1987; Yarbrough, Wapnick, & Kelly, 1979). Both Price and Yarbrough showed the benefits of systematic self-observation of the videotaped practicums using behavioral self-assessment forms, and Yarbrough, Wapnick and Kelly determined that self-observation was as effective as instructor feedback in helping students develop basic conducting skills. In addition, Fleming (1977) noted that videotaped practice sessions helped students effectively prepare for live conducting episodes. As the skill and creativity of computer programming continues to improve, the computer may well be the
next step beyond videotape in providing students with usable feedback, as shown in a study by Schwaegler (1984) in which he used a computer to analyze subjects’ baton patterns and steadiness of hand. In this study, Schwaegler found the computer to be a tool which could be programmed to provide students with effective feedback in the area of basic conducting gestures such as baton patterns.

Although it has not been studied to any great extent in the area of conducting, the use of modeling and simulation techniques has been shown to be an effective means of teaching students basic skills and behavior patterns. Albert Bandura (1969, 1977) has been a leader in the study of the effectiveness of modeling techniques, and cites modeling as one of the “fundamental means by which new modes of behavior are acquired and existing patterns modified” (1969, p. 118). Gonzo and Forsythe (1976), Moore (1976b), Rosenthal (1984), and Zurcher (1985) all showed the advantages of modeling techniques in various aspects of musical study, and Jordan (1980), Lebon (1986), and Kelly (1987) showed the effectiveness of videotaped models in improving various musical skills.

It would be of interest to educators involved in the teaching of basic conducting techniques to study the potential combination of certain aspects of the research done on videotaped conducting feedback with the basic concepts of videotaped modeling, with a goal of determining whether
basic conducting instruction provided by some form of videotaped modeling would be effective in helping beginning conducting students develop certain important conducting skills.

**Purpose of the Study**

The purpose of this study was to compare the effects of guided modeling and unguided modeling on the acquisition of five basic conducting skills by beginning conductors. These five basic skills included posture and baton position, the preparatory beat, rebound, releases, and legato style. The study examined two types of modeling – one with a visual model accompanied by detailed verbal instructions (guided modeling) and the other with visual model only (unguided modeling).

**Research Design**

A posttest only design with two experimental groups was employed for this experiment. Since the research was concerned only with a comparison of two types of modeling, and to eliminate the possible confounding produced by the Hawthorne Effect, it was decided that a control group receiving no treatment would not be used in this study.

The experiment was based on a posttest only design, since each member of the beginning conducting classes indicated no previous training or formal experience in conducting. Any minor differences in inherent conducting ability would be balanced out in the random selection process.
The experimental design was:

\[ R \times_1 O \]

\[ R \times_2 O \]

Assignment of students to each of the two experimental groups was done randomly within each of the two sections of the class. Since each section of Music 261.11 is taught by a different instructor, random assignment of students within each section was made to create as much balance in numbers as possible between each experimental group, and to control for any possible bias due to the potential of different approaches by each instructor.

Each experimental group was assigned a supplementary videotape to view outside of class time. Group A would view a tape of the five selected basic conducting skills demonstrated by modeling only. Group B would view a tape of the same five basic conducting skills demonstrated by guided modeling. The same conductor was used to demonstrate the skills on each tape, a conductor with more than fifteen years of professional conducting experience.
The Research Hypothesis

It was hypothesized that there would be a significant difference in the performance of five select basic conducting gestures between beginning college conducting students who were exposed to guided videotaped modeling and those who were exposed to modeling only videotapes.

The Null Hypothesis

There would be no significant difference in the performance of five select basic conducting gestures between beginning college conducting students who were exposed to guided videotaped modeling and those who were exposed to modeling only videotapes.

Methodology

The subjects for the study were conducting students at the Ohio State University in Columbus, Ohio; specifically those students enrolled in the two Beginning Conducting classes during the Autumn Quarter of 1988 (N=39). All members of the classes were invited to participate in the study, and thirty-one (N=31) elected to do so.

Once the participants were selected, the following procedures were followed:

1. Subjects for the study were randomly assigned to one of two treatment groups, either unguided modeling (modeling
only) or guided modeling. These assignments were done separately within each intact class.

2. Students assigned to Group A viewed a videotape containing the five basic conducting skills demonstrated by modeling only. Students assigned to Group B viewed a videotape containing the same five basic conducting skills demonstrated by guided modeling. Students were exposed to their assigned treatments for a period of six weeks, during which time they were expected to watch their videotape outside of class time as a means to improve their performance of the five basic conducting skills.

3. At the conclusion of the six-week treatment period, students were posttested using a conducting exercise (Appendix F) designed to allow each student to effectively demonstrate his or her level of acquisition of the five basic conducting skills.

4. A panel of experts reviewed videotapes containing the posttest performances of each student, and rated each individual student on his or her acquisition of each of the five basic conducting skills using a “Basic Conducting Skills Evaluation Form” (Appendix E) which consisted of a ten-point
Likert scale to rate each individual skill. These ratings were then subjected to statistical analysis.

Results and Discussion

The basic purpose of this study was to determine if one of two forms of modeling technique, guided modeling or unguided modeling (modeling only) would be more effective in helping beginning conducting students acquire proficiency in five basic conducting skills (posture and baton position, preparatory beat, rebound, release, and legato style). Both parametric and nonparametric analyses revealed no significant differences between modeling only and guided modeling treatment groups on the basic conducting skills ratings as evaluated by a panel of conducting experts. A composite interobserver agreement level of 77.4% among the four judges was achieved.

Mean scores for subjects on each of the five conducting skills ranged from 5.0 to 6.8, indicating that students attained at least an average to slightly above average mastery of the five skills. The absence of a control group, however, does not permit one to attribute such mastery to the videotaped modeling alone. While no statistical advantage was shown for either type of modeling, a very slight numerical advantage was shown in the mean score of students receiving the modeling only treatment in all
skill areas except the release gesture. This result is supported by a previous body of research in musical areas other than conducting.

A variety of concerns should be noted and considered in the interpretation of the results of this study. An initial consideration is the size and nature of the sample population. The need to use intact beginning conducting classes for this study, coupled with the normally small enrollment in these classes, did not allow for a large pool of subjects. A larger sample size may well have allowed for more significance in one or more of the treatments in this study. A larger population may also have permitted a more creative process in treatment assignments to be used that might have allowed for the addition of a control group.

A second concern in this study is the area of interobserver agreement. While an interobserver agreement level of 77.4% is acceptable, an examination of Tables 4 through 8 shows a wide discrepancy in judges' opinions on the ratings for a number of the subjects. These discrepancies contribute to a tendency of the mean scores toward the middle rather than either extreme. One might cite the evaluation form or observer training as ultimate concerns here. Yet, the Likert scale has proven effective in previous research of this type, and every effort was made to assure the proper preparation and training of the judging panel.
Perhaps the difficulty here lies in isolating and accurately observing the individual skills as they are portrayed in a general conducting exercise. Casual comments from the judging panel indicated some difficulty on the part of individual judges in separating the subjects' success in demonstrating individual skills from an overall impression of the subjects' general conducting behavior. This is an area that needs attention in future research of this sort. One might consider isolating subjects' demonstrations of each basic conducting skill, or plan a more directed observation by the judging panel. The use of a five-point Likert Scale might also be considered to help focus the judges' scores into a more manageable range.

An important concern in this particular study is the nature of the classroom instruction that the subjects received during the course of this study, in relation to how it corresponded to the videotaped modeling. In an effort to insure impartiality, no attempt was made to have classroom instruction necessarily conform to the videotaped modeling lessons. As such, conflicting information may well have been presented to the students in the form of gestures or approaches that differed from the videotaped presentation in varying degrees of subtlety. Since the students participated in the classroom instruction on a much more regular basis than they viewed the videotapes, a certain degree of confusion as to the
subjects' ultimate choices in conducting gestures may have existed. This confusion could lead to final conducting performances that were not as demonstrative of the actual videotaped modeling input as they were of the variety of classroom stimuli to which the subjects were regularly exposed. Future research should take into account this potential confounding of the process and initiate approaches that would lessen such potential confounding. The basic classroom instruction should not in any way be in conflict with the materials presented through the videotaped modeling. It is important that the subjects not have to select from a variety of visual presentations to determine the ultimate "correct" approach toward mastery of the basic conducting gestures.

Finally, a concern in this study was the need of the researcher to constantly prod students to faithfully watch the videotapes. The difficulty in motivating students to view the tapes seemed to be the lack of realistic incentives, a fact supported by a significant body of literature which stresses the role of positive incentives in influencing behavior. No incentives were given to the subjects to view the tapes other than the potential of a higher score on the final exam, a weak incentive at best. Future studies of this nature should engage the cooperation of the instructor in providing performance incentives, such as additional grade
points, extra credit, or similar incentives of this nature. This could insure a more substantial pattern of subject performance.

**Conclusions**

Based on the data, it can be concluded that neither guided or unguided modeling showed significant superiority over one another in helping beginning conducting students develop basic conducting skills. As such, one would hesitate to recommend one type of modeling over the other for use with beginning conducting students. Yet, the slightly above average mastery of the five basic conducting skills in question by the subjects indicates that the students did, in fact, learn to perform those basic skills reasonably well. One cannot, of course, attribute such accomplishment solely to the use of the modeling and guided modeling videotapes, and figures do not exist to support any certain degree of contribution by them to the total learning process. However, an examination of the available research evidence previously cited in this study should cause one to review the processes and results of this study more closely before drawing final conclusions.

Despite the diversity of instruction between the two beginning conducting classes, and the wide variety of instructional approaches employed by the instructors of the conducting classes, a certain overall consistency of scores is evident from the data. One might expect a wider
range of scores in this situation with more extremes and differences between subjects in each class. All things considered, the viewing of the modeling and guided modeling videotapes were perhaps the most consistent factors of the instructional patterns for the subjects in this study.

Thus, while one cannot comment with any degree of certainty on the actual value of either the guided or unguided modeling tape in contributing to the achievement levels of the subjects in this study, enough questions are raised by an examination of the data and procedures to suggest that further study is necessary on this matter. Given also the large amount of research supporting the benefits of modeling, both live and videotaped, one would hesitate to summarily dismiss the use of videotaped modeling with beginning conducting classes. Certainly, additional research should be undertaken to focus on specific ways in which videotaped modeling could support the goals of beginning conducting instruction.

**Recommendations for Further Research**

Based on the data and preceding discussion, the following recommendations for further research are offered:

1. Refinement and replication of this study with a larger sample.

2. Refinement and replication of this study with the addition of a control group.
3. In cases where a reasonable number of subjects is not available, one might consider a replication of this study using a control group and only one type of modeling, either guided or unguided.

4. Replication of this study in current form or one of the above forms with greater efforts made to coordinate classroom instruction with the instruction of the videotaped models to avoid sending conflicting signals to the participants.

5. Creation of a system for this type of study whereby the subjects might videotape themselves as they practice with the modeling tapes, allowing for quicker feedback on skill development progress.

6. Development of a more readily usable evaluation process for this specific type of study which will lend itself to greater ease of use and greater interobserver agreement. Resultant changes could focus on the evaluation form, approach to the actual observation, or a combination of the two.

7. Devise some type of “paper and pencil” evaluation to determine if the subjects have acquired and retained in
representational form the information supplied by the models. This might include a test where subjects evaluate a series of videotaped conducting performances which employ the use of discrimination foils.

8. Study the use of various visual cueing devices for the conducting movements to help control the amount of verbal information presented on the guided modeling tape.

9. Subjects for this type of study might be pretested to determine the mode of learning, aural or visual, to which they are most susceptible.
REFERENCES


68


APPENDIX A

LETTER TO ALL PARTICIPANTS
Dear Student:

As a part of my dissertation work, I would like to work with the members of this class as a group representing beginning conductors enrolled in Music 261.11, Autumn Quarter.

It is my plan to investigate the effects of modeling on the acquisition of beginning conducting skills. Your role in this investigation will consist solely of watching a particular videotape which models basic conducting skills. The tapes will be kept in the Music Teaching Center, and your investment of time will be approximately one hour per week. The time spent viewing the tapes will be beneficial to your progress in this course.

It will be important that you follow the directions for viewing the tapes very specifically. The results of this study depend heavily on your cooperation.

The accompanying questionnaire asks for some basic information and your consent to participate in the study. I hope you will take the time to assist with the study. If you have any questions, please see me and discuss them.

Thank you in advance for your time and cooperation!

Sincerely,

David A. Leppia
APPENDIX B

QUESTIONNAIRE/CONSENT FORM
INFORMATION SHEET
MUSIC 261:11

NAME_____________________________________________ YEAR______________

DEGREE PROGRAM_____________________________________________________

MAJOR INSTRUMENT_____________________________________________________

Campus Phone No_________________________

Conducting Experience (check one): ______ yes ______ no

If yes, describe experience below:

Have you ever received any formal instruction in the art of conducting? (check one):

_______ yes _______ no

If yes, indicate the nature of this instruction below:

"I understand the study being undertaken by Mr. Lepple and the role I will play in this study. I accept the time commitments, and agree to participate fully in this study."

SIGNATURE____________________________________ DATE__________________
APPENDIX C

GUIDED MODELING TAPE (TAPE B)

TRANSCRIPT OF DIALOGUE
GUIDED MODELING TAPE (TAPE B)
DIALOGUE TRANSCRIPT

The following is a complete transcript of the dialogue that accompanies the visual modeling on the "Guided Modeling" tape (referred to also as "Tape B"). The dialogue is broken down by skill – each of the five basic skills is a separate section on the tape, with each section separated by 30 seconds of blank tape. As with the unguided modeling tape, each section is announced by an introductory visual panel accompanied by a voice-over announcing the section. A similar voice-over announces the close of each section, encouraging the students to repeat the section as often as necessary until they understand the particular skill. The voice of the conducting model is used to provide the accompanying commentary in each section. Explanatory comments which have been added by the researcher to clarify actions on the tape, but which are not an actual part of the commentary on the tape, are included in italics and in parentheses.

1. POSTURE AND BATON POSITION

The first skill that we are going to discuss is basic posture and basic grip. If we think about basic posture in terms of where you are going to place your feet and your legs, I think of it as simply putting your legs directly below the torso at a point that I feel I can balance easily, and I can also lean forward and back without losing my balance. Basically, I think of anchoring myself and rooting myself, sending roots down through the floor. In this way I have a solid place from which to work. For the rest of the body, I think of elevating or lifting the rib cage up as if I am extending myself taller. I make sure that the knees are not stiff and are not locked; in fact, that there is some flex in the knees. But the basic concept of basic posture is to have yourself rooted.

In terms of the arms, what you want to do is to think of bringing the arms up in this manner (model raises arms slowly), and if you think of the placement of the elbows at a five o'clock position for this elbow on the clock (indicates right elbow) and a seven o'clock position for this one (indicates left elbow), then that is approximately where those elbows need to be placed. As far as how far forward the arms should be, or how close to the body, I like to think of the angle right here, from the upper arm to
the forearm, to be a bit greater than ninety degrees. If it is exactly ninety
degrees, then you will be pulled back too close to the body, and if it's less
than ninety degrees, you can see what happens right here (model shows
tight position of arm). So, it's a matter of opening that angle up and
coming a little bit forward. For everyone, there is a point between this
extreme position here (model shows arms all the way out) and this extreme
position here (model shows arms pulled back) that feels comfortable. But
again, the basic posture and position of the elbows is with the elbows at
the five o'clock position here and the seven o'clock position here (shows
arm positions), with the angle of the arms here, here, and here (shows
upper arm, elbow joint, and forearm) to be greater than ninety degrees. And
that puts you in a position where you should be able to adequately start the
group and give a good preparation.

The other concept here is that you want to bring the focus of attention
in toward the body in an area of a triangle extending from perhaps about
here (model indicates top of head) down to here (model indicates
approximately waist level). Obviously the further that you are out in your
basic posture the less focused that you are and the harder it is for people
to read where the stick should be. Therefore, if you keep the elbows in the
correct position, then you can bring all the energy into this basic
triangular area.

In terms of grip, there are several ways to hold a baton. We might
examine two ways. One way that I hold the baton is to hold the baton
between the thumb and the forefinger and simply wrap the other three
fingers lightly around the end of the stick. Notice that if I turn over my
hand that the knuckles are in a straight line. If they are not in line it is
usually a result of too much tension or allowing the fingers to come
forward this way (model opens fingers a bit). So the goal is to have a very
relaxed feel in the hand but to create almost a straight line with the
knuckles. This is what Elizabeth Green calls the marcato grip. Notice that
it is a fairly neutral grip, and allows people to focus on the tip of the
baton.

The other important consideration is the fact that the baton needs to
be an extension of the forearm. Now you will never, almost never, have
this baton exactly straight; there will always be a slight angle to the
inside. However, it will be a very slight angle. The thing that you want to avoid is turning the wrist out to straighten the angle. What you may want to do is simply shift where the ball of the baton is rooted in the hand. Now I tend to hold the baton more forward where the ball of the baton is actually very close to that intersection between my thumb and forefinger.

There is another way to hold the baton, and that is if you put your thumb and forefinger in this kind of position (model shows tip of thumb and forefinger touching, similar to an "O.K. sign"). Notice that there is a very fleshy part of your hand right here (shows area below the thumb near heel of hand). What you do simply is anchor the end of the baton in that fleshy area, and then simply grab the baton between the thumb and forefinger, and then wrap around with the other fingers. Now this is for the anchor approach. I think that whatever feels comfortable for you and seems to work best is an option that you have to discover on your own; either the ball a little bit more forward or anchored further back. The key is to try to keep the neutral posture with this hand with the straight knuckles so that all of the visual attention can be placed on the tip of the stick.

So, we may want to try this together. I think what you want to do is put your feet directly below your pelvis. Put your feet apart at a distance that feels comfortable. I think that this is far too wide (model shows feet about 24 inches apart). Again, a distance where you can easily balance both to the sides as well as forward. And think of rooting yourself; think of roots growing down from your feet down to the basement so that you have a solid anchor. And what you want to do, again, is to think of elevating the rib cage - literally picking up the rib cage to elevate the body. You want to have a feeling of elevation.

Now let’s just try this together. What I want you to do is to simply bring up the arms into the ready position, and what I would like you to think of is that there are weights hanging under your arms so that the arms are brought up in this kind of manner (model brings arms up slowly), with a feeling that there is actually a resistance to that movement. This should be tried many, many times until you feel comfortable in setting where this basic ictus table is going to occur. Again, you don’t want to be too high, you don’t want to be too low. The ideal ictus level is at a point in which
the players, if you are standing on the podium, can easily read through the tip of the stick to your eyes and still be able to see all of the key moves.

Now, let's just try this again. Make sure that you lock in; that you have roots growing down, that your knees are slightly bent; the chest is elevated, the hands are hanging down to the sides. Again, we think of weights under your arms, and bring ourselves into this ready position.

One other important aspect of grip that I do want to mention and do not want you to neglect is the fact that the posture of the thumb is such that the thumb must always be bent in this manner. Many conductors will conduct with the thumb in this position (model shows flattened thumb position). However, that creates a great deal of tension which goes through the arm and up to the shoulder. If the thumb is brought back to a bent position such as this position, the bent thumb itself tends to absorb a lot of the tension which therefore is not transferred to the upper arm and the upper shoulder. So the secret, again, is to think of the closed hand, a very light, relaxed marcato grip — meaning the closed hand, such as this, with the bent thumb on top.

II. PREPARATORY BEAT

The next topic we are going to discuss is the preparation motion. The preparation has three reasons for existing: one is to give the appropriate tempo, the other is to give the appropriate style, and the appropriate dynamic.

Basically, we are going to focus on the issue of tempo. Our objective is to make sure that the time beating gesture uses exactly one beat of preparation time of the ensuing music. So, we go to our appropriate starting position, the basic posture that we have established before. What is important to establish here is that the movement in fact does take one beat of the ensuing tempo. So in the early stages, what might be helpful for all of you is to think of perhaps one entire measure of the tempo before you actually begin the preparation beat.

Now the physical mechanics of this are as follows. The hand and the baton lift vertically and in a continuous motion drop down to the point
from which the baton started. In other words, all motion starts and stops at the defined ictus table level, which you established by holding your hands in this proper position (model shows the ready position). Let's assume from the players standpoint that this is, in fact, the ictus table. Therefore, if you leave from this point that you will come back to that same point. It is assumed that the time you negotiate from leaving this point to returning to the point is, in fact, one beat of preparation. So the preparation motion, up and down, uses that one beat of time beating.

So, if you'll follow with me, let's just try this several times and then I'll explain one further aspect. I'll simply give you three, and then on beat four come to the top and then give beat one and stop. I'll count through the next measure and again up on beat four and down on beat one. O.K., three, FOUR, one, two, three, FOUR, (model counts and repeats gesture and counting four more times while demonstrating the preparatory gesture).

Now, one other principle that I want you to be aware of is the fact that as you lift the baton in the preparation, that the tip of the baton in fact describes the straight line motion; meaning that if there were a wall directly in front of you, that the tip of the baton, if it were going up the wall, would maintain a constant distance from the wall. If the distance increases away from the wall, you create what is called circular motion; meaning that as you come up, what the players tend to focus on is this part of this time beating mechanism (model points to bottom of wrist) and they lose sight of the tip of the baton. The essence here is to keep the tip of the baton in focus from the viewpoint of the players. So again, to describe straight line motion up and down, you want to avoid any kind of circular motion; and motion from this point (model grabs arm at elbow), whether it be this way (up and down) or this way (side to side) will always be circular motion. The goal should be to create straight line motion on the preparation.

Why don't we do this several times with me. We'll start from the very beginning. Let's use our basic preparation for our starting position, and we'll begin several preparation motions (model demonstrates three preparation motions).
Now in addition to this kind of motion, and in addition to insuring that you come down to this ictus table, when you depart that you come back to the same place, other factors include obviously impulse of will, meaning your will to start the group, which is primarily a psychological feeling, your confidence in the fact that the group is going to start. Obviously to have that and impart that to the group you have to maintain eye contact. And again, if the entire group is beginning, then you must focus your body toward the center of that group rather than toward specific individuals. (Model returns to preparatory position).

So, let’s just try this once again. As you are mimicking my motions, think of eye contact, think of impulse of will: your confidence in their ability to make this entrance with you. (Model demonstrates four preparations).

III. REBOUND

The next topic to be discussed here is that of rebounds. Rebound is the distance that is travelled by the arm and the baton following the takt or the actual occurrence of each beat within the beat pattern. Rebounds determine to a large extent the clarity that we have as conductors. Most conductors, if they are unclear, are guilty of having rebounds that are far too high. From a technical standpoint, for instance, the rebound of beat one - in other words the travel of the stick and the arm following the actual ictus attack of beat one, should technically be no higher than one-half of the height of that original beat, and that follows with the other beats.

Let me just simply demonstrate. I will put a slight takt or feeling of ictus on each beat, and you will see, following that takt, the rebound or the movement of the baton and arm following that moment of beat. (Model begins a slow four pattern). This rebound permits continuous motion even though there is takt in the stick, and notice that the heights of rebounds do not come higher than half the distance of beat one. Notice what happens if I break that rule (model demonstrates four pattern with high rebound). The pattern becomes very difficult to see, I use less horizontal space, and I’m using more vertical space. If I’m able to control the rebound, it forces me to displace the beats more horizontally, which in effect will give you a better legato technique.
So the key to rebounds is to insure that the height of the rebounds do not come up any farther than half the distance of beat one.

**IV. RELEASE**

The next point I will discuss is that of release. The purposes of a release are obvious: to stop the group either at the end of a piece or a fermata or at some point during a phrase. There are basically two kinds of releases. There is the circular release, which we will specifically discuss, or the repeated beat release. Regardless of which type of release you use, there are several factors which are important for releases.

The first factor is that, again, you establish the ictus table, and that if you in fact begin the release motion at this point, that the closure of the release must in fact come back to this same point. The release that we will be specifically demonstrating and that you will be practicing is the circular release, which is perhaps the most universal sign for release. Most releases, and there are exceptions, of course, but most releases are counterclockwise releases, and in fact they must be circles. They should not be ellipses or elongated “L’s”, but they need to be circles. The reason for that is that a release, like a preparation, needs to have a specific tempo and needs to have a rhythm to it. If you negotiate a release which in fact is not circular, or in which the speed of the gesture varies, you disturb the inherent tempo or preparation of the release which causes ragged endings or poor stops. So the goal here is once the fermata is established, is to simply make a counterclockwise release motion starting at this point (*model marks point of departure*) and then ending at this point.

So, you may just try on your own as I am right now simply practicing circular motions, starting at a specific spot and coming back to that spot. The circle is described with the forearm and with a little bit of help from the wrist. But basically what you want to do is focus your attention on the tip of the stick to draw, in fact, a complete and even circle. Notice that the release point is in front of my body; the release point is not out here (*model moves stick to the far right of the body*). The purpose for that, again, is for the players to be able to focus on your face and eyes as well as on what you are doing with your hands. Again, a release, like a
preparation, needs to have good eye contact, and it needs to have good impulse of will.

The next step in learning how to do different kinds of releases is to make sure that you can control both the tempo of the release and the style of the release. Some releases have no accents, other releases have accents. Other releases are obviously fortissimo releases, while other releases are obviously very pianissimo. Those styles and those dynamics must all be learned within the context of the release, but for this very beginning stage I want you to practice setting up on the ictus table, and just with the right hand alone practice these kinds of releases, with the emphasis being on the circle, coming to the same ictus point, and having a definite tempo. (Model demonstrates) FOUR, release; FOUR, release; FOUR, release.

V. LEGATO STYLE

The next point for discussion is what we call the legato technique. Now, the legato technique, as opposed to all other techniques, is characterized by specific kinds of motion. The most important (model begins conducting a legato four pattern) is that the motion is continuous, in that the tip of the baton never stops. It is in continuous motion. It would be very similar to asking a player to blow a very legato air stream. You would not want hitches, you would not want stops in that air stream, you would want that air stream to be as smooth and as continuous as possible. So we can use the words continuous motion and smooth motion.

The other important ingredient in legato technique is the fact that it is rounded, meaning that after each beat point there is a roundness to the beat which permits you to keep the baton flowing. So, regardless of what beat pattern you are in, the fact is that after each beat, there is continuous motion. In fact, if you feel as though you are pulling the baton in between beats, that is the kind of feeling that you want to have to create that legato technique.

Now, the legato technique can also be used even if I put a feeling of takt or ictus into the beat pattern. For instance, as follows (model adds slight takt to each beat point in the legato four pattern). You can see the
baton click at the beat points; however, there is still continuous, round motion following those beat points. If I decide to take out the takt or ictus, just as I have, then I still have smooth, continuous, round motion. Notice particularly the roundness at the corners after beat two and after beat three. Notice that all the beat points do come back to the same ictus table. They don't go above or below that table, they all occur on the same plane.

So the essence of a good legato technique is the ability to keep the baton moving, the ability to create rounded, smooth motion, and the ability to control the rebounds. A good “look” in legato technique is built by using more horizontal motion rather than vertical motion. High rebounds cause vertical motion. Although the motion is continuous here (model conducts legato with a high rebound), and one might say that this is legato, in fact the effect is not nearly as convincing as if you control the rebound (model returns to normal legato pattern), use the space you have available to you, and keep the baton moving. The secret to a good legato technique is pulling in between the beats, because in legato music it is what is in between the beats that is important rather than what is simply on the beats. (Model stops conducting, returns to preparatory position).

So, if you will, just simply put both hands and your body into the ready posture, the ready position, and let’s begin just simply conducting a four-four pattern using this kind of legato technique (model begins conducting the pattern). Just simply mirror my motions. Don’t even think about analyzing, just simply follow exactly what I’m doing. Work for a roundness and continuous motion in the stick technique.
APPENDIX D

STUDY PARTICIPANTS' INSTRUCTION SHEET
STUDY PARTICIPANTS' INSTRUCTION SHEET
MUSIC 261.11
AUTUMN, 1988

NAME______________________________ GROUP________________

The following instructions are intended to help you fulfill the needs of the study in which you have agreed to participate. It is very important that you follow the procedures exactly. Your cooperation in this matter will insure that the results of the study are valid and useful to the researcher.

1. You will be assigned to a particular group in this study. Each group will have its own videotape to watch. Please make sure you know which group you are a member of, and be sure to use only the videotape for your group. YOUR PARTICULAR GROUP ASSIGNMENT IS INDICATED ABOVE NEXT TO YOUR NAME. All materials for Group A are coded in RED, and Group B materials are coded in BLUE.

2. Videotapes will be stored in the Music Teaching Center in Hughes Hall. The tapes may not be removed from this room under any circumstances.

3. To sign out a videotape for viewing, you will have to present your student ID card to the MTC librarian. You will then be asked to sign the tape out in a record book. The amount of time you spend viewing the tape will be recorded after your signature. Your ID card will be kept by the librarian and returned to you when you return the tape. Double check to make sure you have been given the proper videotape for the group to which you are assigned.

4. The videotape is divided into five sections, each demonstrating a particular basic conducting skill. Each section is identified with an introductory panel and verbal explanation of the section. You may work through these sections at your own pace, but avoid trying to do too much at once.

5. You may spend as much time working with the videotape as you wish. It is suggested that spend as much time as possible working with the tape on each of the basic conducting skills. You need not spend long individual sessions, but come back to each topic area several times and work with the tape until you are comfortable with the particular skills portrayed on the tape. It is most beneficial to work individually. Be sure you have your baton with you, and practice the skills demonstrated on the tape along with the tape.

6. It is essential that you work only with the tape you have been assigned. PLEASE DO NOT WORK WITH STUDENTS IN THE OTHER GROUP, AND DO NOT VIEW THEIR TAPE. If you choose to work together with someone while viewing the tapes, make sure it is someone in your own group.

7. If you have any questions on the tape or the procedure, please ask Mr. Leppa. Your classroom instructors have been asked not to help you with any aspect of this study.
8. At the end of the quarter, you will be tested to determine how much you have learned from the tapes. The results of these tests will not directly affect your grade in Music 261.11. However, since the basic skills you are working with on the tapes are the same skills which you will be tested on for your final conducting exam, judicious work with the tapes could well help improve your final grade.

9. If you have any problems with the tapes or notice anyone else with problems, please contact Mr. Leppla as soon as possible. His office is in the Hughes 106 south corridor. His home telephone number is 764-9281. The MTC Staff has instructions on how to assign the tapes to you. If there is a problem with this, please let Mr. Leppla know as soon as possible.

10. Thank you again for your assistance in this study. The goal is to improve instruction for future students in beginning conducting classes, and you are playing a major role in helping to accomplish this.
APPENDIX E

BASIC CONDUCTING SKILLS EVALUATION FORM
BASIC CONDUCTING SKILLS EVALUATION FORM
MUSIC 261.11

NAME ________________________________ DATE ____________________

1. POSTURE AND BATON POSITION 1 2 3 4 5 6 7 8 9 10
   head and arm position
   grip
   stance

2. PREPARATORY BEAT 1 2 3 4 5 6 7 8 9 10
   eye contact
   rhythm
   style, dynamics

3. REBOUND 1 2 3 4 5 6 7 8 9 10
   height
   ictus

4. RELEASE 1 2 3 4 5 6 7 8 9 10
   clarity
   style
   eye contact

5. LEGATO STYLE 1 2 3 4 5 6 7 8 9 10
   flow
   line
   clarity

COMMENTS:

SIGNATURE ________________________________ DATE ____________________
APPENDIX F

POST-TEST CONDUCTING EXERCISE
1. Wie schön leuchtet der Morgenstern

O Morning Star! how fair and bright

Conductor

Philipp Nicolai
English version by
Catherine Winkworth

J. S. Bach

Soprano & Alto
Instruments

Tenor & Bass
Instruments

Voices* (Piano
or Organ)

Copyright, 1938, by G. Schirmer, Inc.
International Copyright Secured
Printed in the U. S. A.
APPENDIX G

MUSIC 261.11 SYLLABUS
Basic Conducting
Music 261.11
Fall, 1988

Bruce Moss
Betty Busch
David Scott

MATERIALS
(1) Text: The Modern Conductor, Fourth Edition
    Elizabeth Green
(2) Baton
(3) 1/2" VHS Video Cassette Tape
(4) Instrument
(5) Music Stand
* Bring all materials to class daily

PURPOSE
The purpose of this course is to develop fundamental conducting skills. As a skill development course, regular practice and daily attendance are both expected and necessary. The emphasis will be upon physical coordination appropriate to learning basic conducting techniques, with some training in rehearsal techniques and procedures.

OBJECTIVES
Students will be expected to:

(1) Demonstrate correct baton hold and posture.
(2) Conduct various basic beat patterns in 1 (weltz) 2, 3, 4, and 6.
(3) Start performers on any beat of various patterns with an appropriate preparatory gesture.
(4) Show releases (individual and group) on any beat of various patterns with an appropriate gesture.
(5) Maintain a steady beat pattern at various tempi.
(6) Demonstrate appropriate communication of dynamics through the baton (e.g., cresc., decresc., p, f).
(7) Demonstrate appropriate communication of styles through the baton, (e.g., legato, tenuto, staccato, marcato, accents, syncopation).
(8) Conduct fermata gestures within basic beat patterns.
(9) Resolve fermata gestures:
    a. caesura
    b. brief pause (cut off as preparation)
    c. no pause (continuation with no breath)
(10) Demonstrate independent use of hands.

(11) Demonstrate expressive and musical gestures appropriate to the style and character of music.

(12) Demonstrate skills in basic score reading and preparation, including basic terminology and transposition.

(13) Demonstrate synthesis of conducting skills learned by leading musicians in assigned musical exercises.

ACTIVITIES

(1) Readings and assignments

(2) Daily practice

(3) Class conducting and discussions

(4) Performing in class ensemble (to be conducted by class members)

(5) Written tests (mid-term, final, quizzes)

(6) Video taping and review/evaluation

EVALUATION

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class preparation and participation</td>
<td>30%</td>
</tr>
<tr>
<td>In Class conducting assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Examinations</td>
<td>20%</td>
</tr>
<tr>
<td>Final Conducting Jury</td>
<td>20%</td>
</tr>
</tbody>
</table>

Evaluation of students will be based on the level of accomplishment of the objectives as rated by the instructor. Some competencies may be considered more important than others in determining the student's grade.

**IN-CLASS CONDUCTING ASSIGNMENTS MISSED DUE TO AN UNEXCUSED ABSENCE CANNOT BE MADE UP.**
APPENDIX H

REVIEW PANEL INSTRUCTION SHEET
TO: CONDUCTING TAPE REVIEW PANEL MEMBERS  
FROM: DAYE LEPPLA  
RE: TAPE REVIEW PROCEDURES  
DATE: JANUARY 9, 1989

Thank you very much for agreeing to serve as a member of this tape review panel. Your assistance is critical to the completion of my study and ultimately my dissertation.

You have each received a videotape which contains conducting performances by 25 beginning conducting students. The performances run around 4 minutes each. Each student conducts two selections. As you watch each student, rate them on their performance of the five basic conducting skills listed on the rating sheet. I am only concerned with these five skills, as they are the only ones which relate to my study. Each of the students has worked with tapes prepared by Professor Kirchhoff, and should have attempted to develop their approach to the five basic skills as taught by those tapes. In order that you might understand exactly what the students are trying to do, I have included a copy of one of the tapes viewed by the students for you to watch before you begin viewing the students’ conducting. IN ESSENCE, YOU ARE RATING THE STUDENTS ON HOW WELL THEY HAVE DEVELOPED THE SKILLS AS DEMONSTRATED ON THE MODEL TAPE! Please keep this in mind as you rate the students.

Note that each category has a ten point rating scale, with ten (10) being outstanding and one (1) being poor. Please use the full range of this scale, showing differences between students as accurately as possible. Do not be afraid to use the extremes of the scale. The ratings will be seen by no one except me. You will be completely anonymous in this project, so feel free to express yourself accurately. Any written comments you wish to add will be welcome. Again, no one will see your rating sheets.

You may review the tape as often as needed. If you need additional blank sheets, please let me know. I have included a few extras at the end of your stack in case you need to redo anything.

Thank you so much for agreeing to participate in this project. I am completely dependent on you for the completion of this study. I know time is tight and you are extremely busy, but I would urge you to complete your viewing and rating as soon as possible so that I might begin to analyze the data.

Thanks again, and if I can ever return the favor, please let me know!
APPENDIX I

SUMMARY DATA

JUDGES’ RATINGS OF SUBJECTS’ PERFORMANCE

ON A POST-TEST OF THE FIVE BASIC

CONDUCTING SKILLS
Table 5

Judges' Ratings of Subject Performance on Skill #1 - Posture and Baton

<table>
<thead>
<tr>
<th>Position</th>
<th>Subjects</th>
<th>Judge 1</th>
<th>Judge 2</th>
<th>Judge 3</th>
<th>Judge 4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modeling Only</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>9</td>
<td>5</td>
<td>3</td>
<td>7</td>
<td>6.00</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>6</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>5.75</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>7.00</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>6</td>
<td>7.00</td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>9</td>
<td>7</td>
<td>9</td>
<td>6</td>
<td>7.75</td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>9</td>
<td>8.25</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>6.25</td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>8</td>
<td>8.00</td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>6</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>5.75</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>5.50</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>8.00</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>5</td>
<td>7.00</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>6.75</td>
<td></td>
</tr>
<tr>
<td><strong>Guided Modeling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>6.50</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>3</td>
<td>6.00</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>6</td>
<td>9</td>
<td>8</td>
<td>9</td>
<td>8.00</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>6.00</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>4.75</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>4.75</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>8.00</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>6.50</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>7</td>
<td>9</td>
<td>4</td>
<td>7</td>
<td>6.75</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>3</td>
<td>5.50</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>9</td>
<td>7.25</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>7.50</td>
<td></td>
</tr>
</tbody>
</table>
### Table 6

**Judges' Ratings of Subject Performance on Skill #2 - Preparatory Beat**

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Judge 1</th>
<th>Judge 2</th>
<th>Judge 3</th>
<th>Judge 4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modeling Only</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>5.00</td>
</tr>
<tr>
<td>02</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>4.25</td>
</tr>
<tr>
<td>03</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>6.75</td>
</tr>
<tr>
<td>04</td>
<td>5</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>5.25</td>
</tr>
<tr>
<td>05</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>6</td>
<td>7.25</td>
</tr>
<tr>
<td>06</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>6.75</td>
</tr>
<tr>
<td>07</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>7.25</td>
</tr>
<tr>
<td>08</td>
<td>10</td>
<td>8</td>
<td>9</td>
<td>3</td>
<td>7.50</td>
</tr>
<tr>
<td>09</td>
<td>2</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>3.25</td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>2</td>
<td>6.00</td>
</tr>
<tr>
<td>11</td>
<td>8</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>6.75</td>
</tr>
<tr>
<td>12</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>3</td>
<td>6.00</td>
</tr>
<tr>
<td>13</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>5.25</td>
</tr>
<tr>
<td><strong>Guided Modeling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>4.75</td>
</tr>
<tr>
<td>15</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8.25</td>
</tr>
<tr>
<td>16</td>
<td>6</td>
<td>9</td>
<td>7</td>
<td>9</td>
<td>7.75</td>
</tr>
<tr>
<td>17</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>6.50</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>3.25</td>
</tr>
<tr>
<td>19</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>1</td>
<td>3.75</td>
</tr>
<tr>
<td>20</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>6.75</td>
</tr>
<tr>
<td>21</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>3.75</td>
</tr>
<tr>
<td>22</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>7</td>
<td>7.25</td>
</tr>
<tr>
<td>23</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>3</td>
<td>5.50</td>
</tr>
<tr>
<td>24</td>
<td>3</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td>5.50</td>
</tr>
<tr>
<td>25</td>
<td>10</td>
<td>9</td>
<td>6</td>
<td>7</td>
<td>8.00</td>
</tr>
</tbody>
</table>
Table 7

**Judges' Ratings of Subject Performance on Skill #3 - Rebound**

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Judge 1</th>
<th>Judge 2</th>
<th>Judge 3</th>
<th>Judge 4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modeling Only</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>8</td>
<td>6</td>
<td>3</td>
<td>6</td>
<td>5.75</td>
</tr>
<tr>
<td>02</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td>6</td>
<td>5.50</td>
</tr>
<tr>
<td>03</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>4</td>
<td>5.25</td>
</tr>
<tr>
<td>04</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>6.75</td>
</tr>
<tr>
<td>05</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>6.00</td>
</tr>
<tr>
<td>06</td>
<td>3</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>6.75</td>
</tr>
<tr>
<td>07</td>
<td>7</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>6.75</td>
</tr>
<tr>
<td>08</td>
<td>10</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>8.50</td>
</tr>
<tr>
<td>09</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>5</td>
<td>3.73</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>6.25</td>
</tr>
<tr>
<td>11</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>7.50</td>
</tr>
<tr>
<td>12</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>6.00</td>
</tr>
<tr>
<td>13</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>5.50</td>
</tr>
<tr>
<td>Guided Modeling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>5.25</td>
</tr>
<tr>
<td>15</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>6.50</td>
</tr>
<tr>
<td>16</td>
<td>3</td>
<td>8</td>
<td>6</td>
<td>9</td>
<td>6.50</td>
</tr>
<tr>
<td>17</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>5.50</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>4.00</td>
</tr>
<tr>
<td>19</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>4.50</td>
</tr>
<tr>
<td>20</td>
<td>10</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>8.00</td>
</tr>
<tr>
<td>21</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>5.75</td>
</tr>
<tr>
<td>22</td>
<td>3</td>
<td>8</td>
<td>5</td>
<td>7</td>
<td>5.75</td>
</tr>
<tr>
<td>23</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>5.50</td>
</tr>
<tr>
<td>24</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>5.50</td>
</tr>
<tr>
<td>25</td>
<td>9</td>
<td>7</td>
<td>4</td>
<td>9</td>
<td>7.25</td>
</tr>
</tbody>
</table>
Table 8

*Judges' Ratings of Subject Performance on Skill #4 - Release Gesture*

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Judge 1</th>
<th>Judge 2</th>
<th>Judge 3</th>
<th>Judge 4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modeling Only</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>2.50</td>
</tr>
<tr>
<td>02</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>3.25</td>
</tr>
<tr>
<td>03</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>5.75</td>
</tr>
<tr>
<td>04</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4.25</td>
</tr>
<tr>
<td>05</td>
<td>6</td>
<td>8</td>
<td>8</td>
<td>6</td>
<td>5.00</td>
</tr>
<tr>
<td>06</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>7.75</td>
</tr>
<tr>
<td>07</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>4.00</td>
</tr>
<tr>
<td>08</td>
<td>3</td>
<td>7</td>
<td>8</td>
<td>5</td>
<td>5.75</td>
</tr>
<tr>
<td>09</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>4.25</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>4.75</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6.75</td>
</tr>
<tr>
<td>12</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>2</td>
<td>5.50</td>
</tr>
<tr>
<td>13</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>2</td>
<td>4.00</td>
</tr>
<tr>
<td><strong>Guided Modeling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>3</td>
<td>6</td>
<td>8</td>
<td>3</td>
<td>5.00</td>
</tr>
<tr>
<td>15</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>6.50</td>
</tr>
<tr>
<td>16</td>
<td>5</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>6.50</td>
</tr>
<tr>
<td>17</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>6</td>
<td>6.25</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>3</td>
<td>4.25</td>
</tr>
<tr>
<td>19</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>5.00</td>
</tr>
<tr>
<td>20</td>
<td>9</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>6.75</td>
</tr>
<tr>
<td>21</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>2.50</td>
</tr>
<tr>
<td>22</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>6.50</td>
</tr>
<tr>
<td>23</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>3</td>
<td>4.50</td>
</tr>
<tr>
<td>24</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>5</td>
<td>3.75</td>
</tr>
<tr>
<td>25</td>
<td>9</td>
<td>7</td>
<td>4</td>
<td>2</td>
<td>5.50</td>
</tr>
</tbody>
</table>
Table 9

*Judges’ Ratings of Subject Performance on Skill #5 - Legato Style*

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Judge 1</th>
<th>Judge 2</th>
<th>Judge 3</th>
<th>Judge 4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Modeling Only</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>3.50</td>
</tr>
<tr>
<td>02</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>3</td>
<td>3.25</td>
</tr>
<tr>
<td>03</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>5.75</td>
</tr>
<tr>
<td>04</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>8.25</td>
</tr>
<tr>
<td>05</td>
<td>4</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>5.75</td>
</tr>
<tr>
<td>06</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>8.75</td>
</tr>
<tr>
<td>07</td>
<td>5</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>5.25</td>
</tr>
<tr>
<td>08</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>8.00</td>
</tr>
<tr>
<td>09</td>
<td>5</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>4.50</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>4.75</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>6.75</td>
</tr>
<tr>
<td>12</td>
<td>4</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>5.00</td>
</tr>
<tr>
<td>13</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Guided Modeling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>6</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>5.25</td>
</tr>
<tr>
<td>15</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>3</td>
<td>4.75</td>
</tr>
<tr>
<td>16</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>10</td>
<td>7.00</td>
</tr>
<tr>
<td>17</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>5.50</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>3.00</td>
</tr>
<tr>
<td>19</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>5.25</td>
</tr>
<tr>
<td>20</td>
<td>8</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>7.00</td>
</tr>
<tr>
<td>21</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>3.50</td>
</tr>
<tr>
<td>22</td>
<td>5</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>6.00</td>
</tr>
<tr>
<td>23</td>
<td>3</td>
<td>7</td>
<td>8</td>
<td>5</td>
<td>5.75</td>
</tr>
<tr>
<td>24</td>
<td>2</td>
<td>7</td>
<td>5</td>
<td>9</td>
<td>5.75</td>
</tr>
<tr>
<td>25</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>7.25</td>
</tr>
</tbody>
</table>