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BEHAVIORAL ANALYSIS OF DIRECTORS OF HIGH-PERFORMING VERSUS
LOW-PERFORMING HIGH SCHOOL BANDS

Doctor of Philosophy
Department of Music
The University of Mississippi

MARK D. WAYMIRE

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ABSTRACT

This study investigated the relationship between student performance levels and teacher behaviors. Ten high school band directors were classified into one of two categories, directors of high-performing bands or directors of low-performing bands, based on audio recordings of concert band performances. Directors from the two categories were matched in terms of years of experience, educational background, and current teaching environment in an effort to delimit possible causal relationships between these factors and student performance outcomes. Each director was observed and videotaped over a three-day period, within two weeks preceding a music festival performance. Field notes were taken during each rehearsal and interviews were conducted with participants. A panel of five independent expert conductors watched the collected video of each participant and evaluated their conducting technique. Teaching materials, including concert repertoire, were identified.

Rehearsals of directors of high-performing bands were fast-paced and included consistent time proportions each day devoted to skill development/warm-up, sight-reading, performance approximations, and repertoire. Directors of high-performing bands used prescriptive rehearsal planning based on explicit desired student performance outcomes. Rehearsals of directors of low-performing bands were less organized and included less time devoted to skill development/warm-up and sight-reading. Directors of low-performing bands spent more than one-fourth of class time in non-instructional activities, which was more than twice as much as directors of high-performing bands. There were 207 episodes of student performance

approximations for directors of high-performing bands versus 14 for directors of low-performing bands. Teacher talking behaviors accounted for 38.99% of selected rehearsal analysis for directors of high-performing bands compared to 51.42% for directors of low-performing bands. Directors of high-performing bands modeled four times more frequently than directors of low-performing bands. Data from director interviews indicate philosophies of music education were markedly different between the two groups of participants. Although directors in matched pairs shared similar professional attributes, few behavioral and/or student performance commonalities were found. Use of skill development/warm-up materials and concert repertoire are discussed.

DEDICATION PAGE

First, this dissertation is dedicated to my beautiful sister, Patricia, who inspirationally exemplifies the words *tenacity* and *determination*.

Secondly, this dissertation is dedicated to all great music educators whose names will always be unknown but to a few. Certainly these dedicated, insightful, adamant, and convincing musician-educators who work diligently to infect young people with the often unexplainable and certainly un-quantifiable love of music deserve as much recognition as all the famous performers, conductors, music teachers, and composers they help create.

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Dr. Alan Spurgeon, Graduate Advisor, Department of Music
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Thank you to all family members, most certainly my mother and father, as well as friends, colleagues, professors, and students past and present who have provided me with support through kind words and meaningful actions throughout this entire process. Thank you to the participants and their students who graciously shared their school music world openly so that this study could be realized. Specifically, I would like to acknowledge and thank those who have most lead me to this point of my life and to those who have directly affected the efforts that have gone into the completion of this document:

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CHAPTER 1

INTRODUCTION

Expert teaching lies at the core of every accepted methodology, proposed innovation, and evaluative process of the education paradigm. Though defining expertise in the field of teaching is a difficult and complex task, expert teachers are generally described as those who possess high levels of knowledge and instructional skills gained from explicit training and invaluable experience. In most fields, a specific end-product or expected end-result determines the training and skills needed to establish someone as having expertise. Someone who has expertise in the education profession is understood to be effective at producing high-levels of measurable student achievement. Beyond subject knowledge and expertise, education experts possess effective communication skills and thought processes that cause much of their classroom behaviors to appear as being intuitive. Within recent music education research, many descriptions of expertise are similar to those of Worthy (2006) where expert teachers are identified as having “extraordinary” skills and “extensive” knowledge, producing “consistently” high levels of student achievement (p. 51). When describing expert practitioners, Cavitt (1998) offers, “It is doubtful that any amount of preparation would permit a teacher to anticipate every problem encountered within a rehearsal” (p. 1). In other words, music education experts know their craft well, based on training and experience, and perhaps most importantly, are able to respond to the

ever-changing classroom environment intuitively in order to facilitate positive student performance outcomes at the highest levels of effectiveness.

Amid the many positive outcomes that are the result of successful high school band programs, it is the rehearsals and subsequent performances of high school bands by which each program's success is most appropriately measured. In this study, student performance levels were measured by evaluating each participating director's band as high-performing (above average) or low-performing (below average). By examining associations between teacher behaviors and student achievement outcomes, this study may help identify what behaviors of directors of high-performing bands might be considered exemplary and thus important for informing current practitioners and training future band directors. Additionally, this study sought to examine if educators with varying years of experience can demonstrate band-directing expertise. To begin to answer these questions, expert and novice teaching were examined.

A more complete understanding of expertise can be developed by contrasting one who qualifies as an expert with someone who is a novice. Such a comparison has been formulated by Dreyfus and Dreyfus (1986) in an attempt to define human intuition and expertise from a philosophical standpoint with practical application to all fields. Now referred to as the Dreyfus Model of expertise development, five progressive levels are defined: novice, advanced beginner, competent, proficient, and expert. A novice in particular is described as having "textbook" knowledge without connecting it to practice, suggesting the need for meaningful teaching experiences. The Dreyfus Model also portrays the novice as needing supervision and lacking the ability to see the "big picture." Though this and similar models do not refer to a specific number of years of experience associated with the expert level, one would assume that a certain amount of time is necessary to acquire the skills and behaviors needed to qualify one as an expert. When

depicting novices in the field of music education, researchers often refer to those who are no longer pre-service or student teachers, but are in their first few years of professional teaching (Goolsby, 1996, 1997, 1999; Bergee, 2005; Irwin, 2006).

Music education researchers have compared novices and experts and have revealed characteristics for identifying a teacher as being either a novice or expert. Westerman (1991) investigated the thinking and decision making of expert and novice teachers during three stages of teacher decision-making: preactive or planning, interactive or actual teaching, and postactive evaluation and reflection. Experts, in contrast with novices, were shown to be much more reflexive and comprehensive when viewing their teaching as it related to all students and the overall curriculum, suggesting that novices need experience to better develop these skills. Allen & Casbergue (2000) offer that expert teachers, unlike novices, possess rich schemata, cognitive skill sets that allow them to demonstrate significantly better recall of meaningful past classroom occurrences. Recall ability is indicative of a necessary skill level that allows experts to solve problems based on past experiences, enabling them to better react to ever-shifting classroom situations. This research shows that novices not only lack *past* experiences in which to educate current decision-making, but also lack recall of classroom events in general. If novices cannot accurately/thoroughly recall and expert teachers can, then when and how do novices develop the ability to move through levels of accurate/thorough recall of specific behaviors on their journey toward expertise?

The aforementioned concepts and questions point out the overt need to continually evaluate behaviors of expert teachers in order to aid the development of novice teachers. Many teacher education programs and state education entities have responded by creating mentoring programs for novice teachers. The Arkansas Department of Education, in literature explaining its

state required mentoring program, identifies a novice teacher as anyone with less than one year of experience. Other state agencies' mentoring programs reflect similar descriptions where a novice is defined by years of experience rather than by demonstrated skills. Though the value of such programs cannot be argued here, questions arise as to why a novice often is identified singularly by a specific number of years of service. When is a teacher no longer a novice? Is there a descriptive continuum of skill levels that represent the evolutionary stages between novice teaching and expert teaching? If so, can these stages be defined by specific behaviors or skill sets for music educators?

Researchers have looked purposely at different types of behaviors and/or stages of expertise development that suggest measurable dimensions between novice and expert levels of teaching. Many of these studies have originated in the general education field and include those by Allen & Casbergue (1997, 2000) and Berliner (1986, 1989). These researchers, much like Dreyfus and Dreyfus, identify stages of teacher expertise as indicated by demonstrated teacher prowess increased through connections between knowledge and practice. Each also suggests that as skills increase, intuition or an ability to solve problems based on informal methods gained outside of prescribed methods or formulas also increases. These informal methods, known as heuristics, are based on teacher trial and error and are difficult to qualify. Extensive research of established formal methods and heuristics continues to inform teacher education, though a definitive prescription for obtaining teaching expertise remains elusive.

In instrumental music education, perhaps expert abilities are developed in part when directors address the unpredictability of music rehearsals, a reality where conductors must adapt quickly to the constantly changing social and academic/music-learning environment. These constantly changing rehearsals might be considered as periods of practice designed to reach an

ultimate performance goal through error correction, removing performance flaws in order to reveal the truest nature of the music as conceived by the composer. Eliminating these errors, according to Cavitt (1998), is approached similarly among experts. Expert teachers understand implicitly that there is no single correction procedure that will effect change for all errors with all students. “What does remain constant for the expert music conductor is the spontaneous decision-making process that teachers undergo to determine the next proposed solution” (Cavitt, 1998, p. 12).

Various research in music education addresses the continuum of acquired teacher skill that leads to expert teaching. Studies by Goolsby (1996, 1997) compared behaviors of experienced, novice and student teachers in music rehearsals. The similar results from both studies contribute to a developing definition of what each stage of progress towards expertise looks like as described by specific teacher behaviors and reactions to various classroom dynamics. In the Goolsby studies, pre-service and novice conductors talked more than experts. Experts divided class time more equally between fundamentals and music performance time and used modeling more than novices, particularly non-verbal modeling. The targets of rehearsal were also quite different between inexperienced and expert conductors. Bergee (2005) compared novice, intermediate (graduate student), and expert orchestral directors. Each conductor was asked to verbalize his or her thought processes while conducting. Results suggest that expert conductors were more confident with all skills, with less for the intermediate, and again less for the novice conductor. These results may be reflective of previously mentioned studies that address recall or heuristics as each reflects an experienced conductor’s abilities to adapt and flow with classroom dynamics as they change throughout the rehearsal.

Research suggests that not all teachers progress the same, even when possessing similar education and teaching experience. Barrett, et al. (2002), studied the behaviors of two novice teachers. Both were similarly trained and had comparable personal backgrounds, and both were participating in a district-wide program for teacher development. After a year of observation and interviews, neither teacher's classroom practice reflected the goals established by the program. Both teachers however, were observably different from one another. Though not demonstrating objectives of the teacher development program, one teacher reflected behaviors consistent with literature's characterization of instructional novices, while the other teacher reflected behaviors more definitive of a veteran teacher. Each instructor's personal beliefs about teaching were different, suggesting additional factors, which may contribute to a teacher's ability to be effective beyond one's education and inservice development, including teaching philosophy.

Assessment of effectiveness is an ongoing topic in the field of education. The past two decades have shown considerable interest in teacher assessment through standard-based reform. Much of the current and developing processes for teacher evaluation are reactions to the National Standards in Education, as well as No Child Left Behind (2002), and the resultant entity for measurement: National Assessment of Educational Progress (NAEP). These policies, as well as state and local standards turn toward measurable student achievement as the primary source for measuring teacher effectiveness. Linda Darling-Hammond, Professor of Education at Stanford University, addresses the validity of testing student achievement, stressing that successful policies should seek to both assess teacher effectiveness and develop more effective teachers at the individual and collective levels (2008). How is effectiveness measured through testing of student achievement in the arts? Though application seems logical to student achievement in

objective studies such as music history or music theory, how is achievement measured in music performance, specifically large ensemble performance?

Referring to expertise and effectiveness, Shanteau (1987) suggests that each domain (field of study or practice) establish *what* is to be measured and *how* it should be measured by those within each domain. Shanteau goes on to state “experts are operationally defined as those who have been recognized within their profession as having the necessary skills and abilities to perform at the highest level” (p. 7). Although most areas of the country have music festivals and contests that assess performance achievement of high school bands, the standards are different from area to area and therefore, similar evaluations may not uniformly indicate similar levels of achievement.

As music educators continue to seek ways to improve student achievement through teacher effectiveness, researchers continue to study different aspects of teacher training and teacher behavior that contribute to the advancement of music education. Though the label of *expert* is perhaps the ultimate descriptor of best teaching, no single archetype in music education exists. It is the search for examples and descriptors of best practice, however that continually increases music education’s awareness of what teacher behaviors best benefit our music students and those preparing to be knowledgeable, practiced, intuitive music teachers. When examining expertise, Atherton (2008) asks, “What is the nature of the confidence which allows a surgeon to operate, never entirely sure what he will find when he gets in there, but clear that he cannot close up until he has sorted it all out? How does the [expert] counselor form just the right question, in just the right tone, at just the right time to enable a client to see her situation differently...to be able to take informed risks” (p.1)?

Cognizant of the diversity of interest in recognizing and defining best teaching practice, this investigation looked at expertise in the large music ensemble setting, particularly, high school band. Questions of expertise were examined based on the achievement quality of student performance of specific high school ensembles. Associations were made between student achievement and director behaviors to determine what may have contributed to the quality of the student-demonstrated music performance levels. For each participant, years of experience, professional background, and teaching environment were considered for their possible contributions to teacher behaviors and student achievement. A variety of school sizes and demographics, from different regions of the country, were included to reflect as broad a population as possible. Through videotaped observation, field note collecting, and interview analysis, the following research questions were addressed:

1. When analyzing classroom behaviors that are shared and different between and among directors of high-performing and low-performing high school bands, what proportions of each director's entire allotted classroom time are devoted to the following five categories: repertoire rehearsal, play-through performance (music not explicitly receiving instruction), skill development/warm-up, sight-reading, and non-instructional time use? How do these proportion allocations compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?
2. What are the frequencies, rates per minute, durations, and time allocations for each selected rehearsal frame target category between and among directors of high-performing and low-performing high school bands? How do these statistics compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?
3. What are the frequencies, rates per minute, durations, and time allocations of specific teacher and student behaviors observed in selected rehearsal frames between and among directors of high-performing and low-performing high school bands? How do these statistics compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?
4. What conducting behaviors are shared and are different between and among directors of high-performing and low-performing high school bands? How do

these behaviors compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?

5. What non-rehearsal attributes (age, experience, education, teaching environment, philosophy, etc.), which may contribute to teaching quality, performance quality, and conducting behaviors, are different and shared between and among directors of high-performing and low-performing high school bands? How do these attributes compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?
6. What skill development/warm-up, sight-reading, and repertoire materials are used between and among directors of high-performing and low-performing high school bands?

CHAPTER 2

REVIEW OF LITERATURE

Expertise in large ensemble music education is principally identified by the ability of the teacher to establish and accomplish rehearsal goals at an exemplary level. Research regarding best practice, as demonstrated by experts, has been done at various education levels. Researchers describe expert band directors in different ways, specific to each study. Worthy (2006) describes expert teachers as having “extraordinary” skills and “extensive” knowledge, with “consistently” high levels of performance product (p. 51).

Within and outside of the education research environment, experience is largely measured by increases of knowledge and skill over time. How much time is needed to reach teaching competency or ideally, expertise? Research designs such as that of Madsen and Standley (1991) define experienced music teachers based on a specified number of years of service. In this study specifically, experienced teachers were defined as those with a teaching degree and 1–10 years of teaching service, and experts as those with a degree and 10+ years of experience. Results of this research suggested that definitions for experienced and expert teachers might best be defined by a set of teacher skills, and teacher classroom behaviors, not a prescribed number of years of experience. Through extensive research, expertise developed through experience has been shown to be required for high levels of teacher effectiveness. Research regarding expertise and effectiveness aims to inform professional practice and

enlighten teacher education, increasing the depth of pedagogical information as related to best practice.

Researching Expertise

Research in areas related to teaching expertise in the large ensemble setting includes a variety of specific areas of music education study: error detection, verbal vs. non-verbal instruction, time management, sequential teaching patterns, teaching intensity, score study, conducting, etc. All of these areas of interest make associations between teacher skill and student learning. Though aiming at various specific areas within music education, the wide range of research topics could be considered as studies inclusively designed to identify or define best teaching practices: teaching effectiveness/expert teaching.

Terms that are common to music observation research are defined in Chapter 3, pp. 55—59.

Error Detection

Teaching effectiveness based specifically on error detection/correction has been studied by a number of researchers. Williams (1984) developed the *Exploratory Inventory of Diagnostic Aural Skills* (EIDAS) as a way for listeners to diagnose tape-recorded band performances. Specific elements of performance were identified including error detection. Analysis of data from this study suggests that there is less variance among evaluators when evaluating high-level performances. Variance among college conducting students was greater than among professional

conductors. Tempo and dynamics appeared to be most easily discriminated. Use of a prepared evaluation method appeared to be more useful than a free-response format for organizing specific feedback regarding different aspects of performance.

Menchaca (1989) looked at secondary instrumental conductors' effectiveness in solving problems of musical elements with relationships to student attitudes. Videotape analysis revealed that conductors use verbal instruction most to correct problems with pitch, rhythm, tempo, articulation, and dynamics. This study revealed increased positive perceptions on the rehearsal, the conductor, and the music based on an increase of ensemble play, specificity of error correction, and positive feedback.

A study by Francisco (1994) analyzed rehearsals of 25 conductors at 15 summer music camps. Experts evaluated the effects of communication on performance improvement including the detection and correcting of performance problems in the categories of tone, intonation, rhythm, technique, interpretation, and balance. Technique was revealed as easiest to correct and rhythm errors were easier to correct than intonation errors.

In a study by Doerksen (1994), music education majors enrolled in at least one of two senior-level methods courses where the control group and expert high school teachers with a minimum of four years teaching were the treatment group. After participants listened and responded in written form to recordings of four performances of varying difficulty and quality, the participants ranked elements of the performances and prescribed solutions for errors. Results indicated a high level of similarity in the responses between pre-service music majors and the expert teachers.

A 1998 study by Deborah Sheldon placed undergraduate instrumental music majors into a control or experimental group. The experimental group received 50 minutes of sight-singing

and ear-training in addition to the instrumental methods and conducting training previously received by both groups. Experimental group students demonstrated better ability to identify errors on one, two, and three part singing examples. Rhythm error detection was more easily accomplished than pitch error. Differences attributed to texture were not significant.

Error correction in band rehearsals of five expert middle school and five expert high school directors was researched by Cavitt (1998). Videotape of three consecutive rehearsals was collected for all participants. Selected rehearsal frame analysis revealed no meaningful differences between middle school and high school directors' correction procedures. Cavitt (2003) looked at error correction targets of ten high school band conductors using videotaped rehearsals for data collection. Of the 332 selected rehearsal frames analyzed for frequency, intonation and tone ranked highest, followed by articulation, rhythm, and dynamics. Conductors addressed multiple targets with some frequency. Overall durations of teacher behaviors versus student activities revealed 59% and 40% respectively. Both of these studies will be discussed later in this document as both serve as strong models for this researcher's study.

Sheldon (2004) used multiple listenings of band music using four-voice writing to examine error detection by brass and woodwind instrumentalists. Error identification was most accurate on the first of three listenings. Identification mistakes outnumbered correct responses on the last two listenings. Most errors were identified correctly in the top two lines of the score while fewest correct error detection and labeling occurred in the bottommost voice. This data suggests that multiple listenings may not help error detection.

Error detection research shows that inexperienced teachers are less likely to accurately detect and diagnose performance errors than experts. Research has produced mixed results regarding the order in which errors are prioritized for correction. In most studies, pitch/intonation

emerges as one of the most difficult errors to address. Studies show that when treated with specific instruction regarding error detection or listening skills, students and conductors improve their detection expertise.

Verbal versus Non-Verbal Teaching Behaviors

Verbal versus non-verbal behaviors of directors have been studied and are often related to conducting, but are presented separately from conducting studies here due to different foci. Roshong (1978) viewed videotape of three college band conductors to place all non-verbal director behaviors into one of two categories, approval, and disapproval. The behaviors were defined as facial and body movement that indicated approval or disapproval. After viewing videotape of three expert conductors, evaluators listed specific behaviors in each of the two categories. Approval was seen most often during student performance with disapproval viewed most often during instruction. Disapproval behaviors outnumbered approvals.

Carpenter (1986) scripted the rehearsals of junior and senior high band directors to identify qualitative and quantitative behaviors. The first of two scripting forms rated personal teacher qualities as related to organization, pedagogy, and error detection. A second form was used to categorize specific verbal behaviors including specific or general approval for social and musical student behaviors, musical elements rehearsed, and techniques used to initiate behavior. Among the findings were that teachers were more disapproving than approving and that feedback behaviors were better predictors of overall rehearsal quality than were initiating behaviors. The frequency of attending to various musical elements was not predictive of a highly

rated rehearsal. Differences between junior high and high school rehearsals were evident throughout the study.

Research by Tyson (1988) identified verbal behaviors demonstrated by an outstanding choral teacher during regular classroom rehearsals. Behaviors were categorized into two captions, subject-based content events, and instructional function events. Both captions contained sub-captions. The study revealed that the most frequently used subject-based content events were phonation, diction, “off-count rhythmic energy,” and attacks and releases. Instructional function events were identified most frequently as giving directions, followed by vocalizing with students, explaining, positive modeling, using psychological devices, negative modeling, and disciplining.

Rehearsal effectiveness of student teachers as reported by Bergee (1992) considered conducting technique and instructional skills. Rapport is addressed as it relates to overall classroom and the rehearsal environment. Bergee categorized teacher effectiveness into three large areas: conducting technique, teacher-student rapport, and instructional skills. After analyzing 251 returned surveys from expert teachers regarding what specific skills under each of the three large categories were most important for student teachers, classroom management and teaching intensity ranked highest.

Dunn (1997) observed students from two high school choirs who were divided into a control and experimental group. Student performance based on feedback versus no feedback and facial versus no facial reinforcement was analyzed through recordings of 40 choral performances. Students receiving feedback had higher rated performances, demonstrated a more positive attitude, and demonstrated more off-task behavior than students receiving no feedback. Both groups demonstrated the least off-task behavior during group performance time.

Luis Gonzales (2001) studied effectiveness by comparing rehearsal procedures and philosophies of three expert public school conductors and three expert postsecondary wind band conductors. Videotape of “typical” rehearsals and a questionnaire produced data indicating that all six conductors shared an effective rate of pacing, a systematic rehearsal format, timely interjections of instructional comments, and a philosophically based rehearsal procedure. Common behaviors among all the conductors regarding teaching, conducting, and personal skills were reported as contributing factors to rehearsal effectiveness.

Academic and social approval and disapproval of expert conductors was studied by Lien (2002). Ten expert South Dakota band directors were selected to be analyzed using videotaped rehearsals. The researcher sought to investigate the ratio of approval and disapproval based on previous research and education pedagogy recommending an 80:20 ratio of approval and disapproval in the classroom. The expert teachers in this study demonstrated a 53:47 ratio. Data analysis also indicated approval and disapproval rates per minute for each director to be unstable/unpredictable.

Kelly (2003) analyzed music education interns’ time use of verbal and non-verbal behaviors in middle school and high school choral ensemble rehearsals. Behaviors were categorized as instructional behavior, rehearsal behavior, and non-instructional behavior. Each category had sub-categories. Thirty-six random videos of taped rehearsals were evaluated using a CRDI device (Continuous Response Digital Interface). Results revealed interns used the majority of time showing non-verbal behaviors followed by verbal instructions. High school interns spent more time using rehearsal behaviors while middle school interns spent more time using instructional behaviors.

Studies addressing verbal and non-verbal teacher behaviors are often related to the use of class time. Positive and negative feedback has been researched and indicates that though general education pedagogy recommends a ratio of 80:20, expert music instructors demonstrate ratios ranging from being more equal, to most often favoring more negative than positive feedback. Facial expression is shown to have some impact on rehearsal effectiveness though more research is needed in this specific area.

Sequential Teaching Patterns

Researchers, using different methods, have studied sequential patterns of instruction in music. These studies are perhaps influenced most by the work of Cornelia Yarbrough and Harry Price. General education research served as a model of the first study by Yarbrough and Price (1989). These two researchers collected videotape of rehearsals of music major freshmen, sophomores, and experienced music teachers to determine if prescribed sequencing of instructional patterns was being utilized during teaching (teacher presentation of a task, student response, related and specific teacher reinforcement that is being developed and refined). Mistakes in proper sequencing outnumbered correct sequencing in all three groups. A paper by these two researchers on the subject of sequential teaching in music was presented in 1990 at the International Society for Music Education Research Seminar, in part influencing additional researchers to explore this topic. Price and Yarbrough (1993) replicated their 1989 study, but with non-music majors. Non-music majors, as with music majors from the previous study, preferred rehearsals using correct sequential patterns of instruction.

Further studies analyzing sequencing have been done by Maclin (1993), Yarbrough and Hendel (1993), Price, Yarbrough, and Hendel (1994), Bowers (1997), Browning (2002) and Latten (2003). These particular studies confirm earlier research and additionally look at the instruction of sequencing to college music education majors. Teaching sequences have been shown to be effective in all areas of education. While some studies show no difference between groups receiving or not receiving instruction through correct sequential patterns, most studies show rehearsals with correct sequences to be more effective and favored by performers.

Intensity

Teaching intensity has been researched regarding areas of vocal intensity and physical intensity as demonstrated by music directors. Similar studies look at teacher personality and teaching styles (rapport). An early study on the effects of intensity as demonstrated through conducting was published in 1975. In this study, Cornelia Yarbrough (1975) analyzed to what degree a “high magnitude” conductor versus a “low magnitude” conductor would affect performance and attitude of four mixed choirs under different conditions. The effect of magnitude was measured by judges' ratings of audiotaped musical performances, behavioral observation of student attentiveness, and self-report of student attitude. Videotape recordings allowed evaluators to observe both conductor and students in a split screen effect. Results indicated no significant differences in musical performance ratings, percentage of students' off-task behavior, and student attitude towards music. There was a significant difference in student attitude towards the high magnitude conductor versus the low magnitude conductor with performers preferring the high magnitude conductor.

Byo (1989) considered conducting intensity, testing if undergraduate conductors could be taught high and low intensity conducting and if these behaviors could then be demonstrated clearly to observers not trained in intensity. Results demonstrated that non-trained observers could recognize the difference. In a closely related study, Byo (1989) sought to determine if independent observers could recognize low versus high intensity conducting by undergraduate beginning conductors. Three hundred-twenty observers viewed stimulus video of contrasting conducting intensity. Results indicated a 77% correct response rate from four groups of observers: undergraduate conductors, graduate conductors, non-majors, and high school music students. Analysis indicated a significant difference in mean correct response between graduate students and the other three groups.

Johnson (1995) looked at three treatments and their effect on conducting intensity of pre-service music education students: aural commentary from the instructor, written commentary, and behavioral self-assessment. A control group was included. Those conductors receiving aural feedback demonstrated the most positive results, while those receiving written commentary demonstrated the most improvement. Self-evaluation was least effective. Conducting students preferred instructor feedback to self-evaluation.

Kaiser (1998) investigated high versus low intensity teaching on band musician's evaluation of teaching effectiveness. College music majors and non-majors participated by viewing videotape of three conductors using rehearsals of high verbal and physical intensity and the same conductors using low intensity rehearsals. Evaluators rated the rehearsals of high intensity more effective than those of low intensity.

Katia Madsen (2003) studied accuracy of instruction, teacher delivery, and student attentiveness as each related to the evaluation of teacher effectiveness. Four distinct groups of

observers viewed video of rehearsals: 42 music students grade 6-8, 42 music students grade 9-12, 42 undergraduate music majors, and 42 experienced classroom music teachers. Secondary students were from band and choral populations and the experienced music teacher population included college and professional music teachers from a state university. After scripting each videoed rehearsal, a Likert scale was used to rate sub-categories under each of the three main categories prescribed by the researcher. Responses from all four groups were overtly similar suggesting a “global” agreement on teacher effectiveness. Secondary students “almost universally” rated rehearsals higher when delivery was high (energetic) despite the accuracy of information delivered. Professional musicians rated rehearsals highest when levels of instruction were simultaneous with accuracy of instruction and high teacher delivery.

Intensity studies in music education have largely shown that students perceive rehearsals as more effective when high teacher intensity is evident. However, a teaching style that uses high intensity rather than low intensity has not been shown to be more effective with student achievement.

Score Study

Score study is overtly lauded as important to large ensemble teaching success, perhaps most at the secondary and college level of instruction. Few studies address its effects on teaching success. Lane (2004) offers a qualitative study aimed at providing a holistic description of procedures used by undergraduate instrumental music majors on score study tasks. Relationships among procedures and musical contexts as well as score study tendencies toward educational and musical ability objectives were compared to those of expert conductor’s. Though students

indicated the creation of an internal sound image as one important reason for score study, participants revealed little evidence of internal sound development. Participants were observed demonstrating knowledge of correct analysis of musical elements within various types of scores, however, solo literature was addressed more for musical qualities and full ensemble scores were addressed more for technical requirements. Course work progress and teaching experience revealed positive effects on accuracy of score reading skills.

As with preparation in any field of education, score study (curriculum study) aids teachers to be better prepared for rehearsals. The degree to which score study improves effectiveness and what specific types of score study best aid rehearsals has not been researched with any frequency.

Use of Rehearsal Time

The allocation of rehearsal time has been a much-studied topic among researchers. Application of research in this area garnered some attention prior to 1980, but largely in method books and teacher education textbooks. A study by Murray (1980) addressed the application of early research on the training of new teachers to improve the behavior of singers. Murray specifically addressed publications that lead to the conservation of time, increased attentiveness, and improved student attitude.

Sherrill (1986) analyzed the rehearsal and conducting techniques of four junior high school and four senior high school conductors. The criteria for selection were excellent festival records and a reputation for having developed successful band programs. Initial videotapes were screened for examples of skill development/warm-up /tune-up procedures, the teaching of

balance, the teaching of intonation, and the teaching of rhythm. Observation of the videos found examples of the conductors teaching within the four main categories: tuning and warming up, intonation, balance, and rhythm. Only minimal examples of the following sub-categories were found: odd meter passages, unusual or difficult rhythms, and mixed meter. Other desired conducting behaviors, such as facial expression, eye contact and expressive beat patterns were found to be minimal.

Effective rehearsal was examined by Buell (1990) using videotape analysis, conductor interviews, ensemble member interviews, and researcher observation. Results revealed increased effectiveness when playing time was indicated as a high priority for class time allocation. Overall, teaching effectiveness was quantified as a combination of exceptional musicianship, conducting technique, and personality.

Research by Price and Yarbrough (1981) addressed student performance and attentiveness as related to the use of classroom instructional time. Videotaped rehearsals were examined for the following behavior variables: performance time, non-performance time, frequency of social and academic approvals and disapprovals, stops, complete and incomplete teaching units, teacher errors, and teacher eye contact. Multiple regression analysis indicated strong relationships between off-task behavior and specific individual teachers, non-performance activity, and teacher eye contact.

Witt (1996) studied rehearsal time use, comparing middle and high school orchestras with middle school and high school bands. Forty-eight instrumental rehearsals were analyzed, equally representing both ensemble types. Rehearsal time was divided into teaching time versus “getting ready” time. Student behaviors were divided into on-task and off-task behaviors. Time was additionally measured for announcements, tuning, organization of music, and other “getting

ready” activities. Orchestras spent double the time tuning than did bands. Orchestras had fewer periods of instruction, but for longer periods. “Getting ready” time was greatest for orchestras. Bands spent more time organizing, with middle schools surpassing high schools. Orchestra students were statistically more off-task compared to band students.

Brendell (1996) looked specifically at the initial minutes of high school choral rehearsals. Thirty-three high school choral rehearsals were observed. Off-task behaviors of students occurred most often during less-singing and non-singing time. On average, conductors allowed 43.45 seconds to pass before speaking and averaged 14 to 19 minutes of time before the rehearsal of literature. The most common activity prior to literature rehearsal was sight-reading, followed by vocal skill development/warm-up, getting ready, and physical warm-up. Off-task behaviors occurred most often during getting ready time, followed by physical warm-up and then time categorized as other.

Important studies by Goolsby (1996, 1997, 1999) examined rehearsal behaviors of conductors on various levels. The first study (1996) analyzed time spent by student teachers (pre-service), novices, and expert teachers. Experts devoted more time to fundamentals and student performance, while student teachers and novices dedicated less time to fundamentals and spent more time than expert teachers giving verbal instruction. Goolsby studied the same three levels of music instructors in 1997. Rehearsal targets of rhythm, tempo, and blend received more attention by experts than from novices and student teachers. Experts were shown to devote significantly more rehearsal time to student performance. In addition to findings from his previous two studies (1996, 1997), Goolsby (1999) revealed that experts also used short durations of verbal instruction and achieved rehearsal goals in much less time than student teachers and novices. These studies will be discussed more at the end of this chapter due to their

influence on the current research.

Kotchenruther (1998) observed how twelve middle school string orchestra teachers prioritized rehearsal time. Participants were interviewed and videotaped during three rehearsals. Conductor stated priorities were examined against the video footage. Video did corroborate most conductors' priorities based on duration and frequency count analysis of rehearsal goals. Results showed that fundamentals were prioritized, followed by physical criteria, and then expressive and interpretive criteria.

Arthur (2002) looked at the use of classroom time by experienced teachers in choral rehearsals of beginning and advanced choirs within five high schools. Videotaped rehearsals were analyzed and demonstrated that all five conductors changed pace within each rehearsal. Student performance time was greater than teacher talk. For beginning choirs, the rate of change of activity per minute was 2.94 for teachers and 3.04 for students. For advanced choirs, the rate of change of activity per minute was 3.53 for teachers and 2.74 for students, thus advanced choirs rehearsed at an overall faster pace than did beginning choirs.

Two studies by Worthy (2003, 2006) were based on selected rehearsal frame analysis of expert college conductors. The first analyzed two separate rehearsal series, an intercollegiate honor band and a high school honor band, both directed by the same expert conductor who was observed rehearsing the same repertoire with each ensemble from the initial reading of the repertoire through the final performance. Analysis of the collected data show that when rehearsing the college-level ensemble, the conductor was more likely to focus on multiple targets simultaneously (46%) and focus most on single targets with the high school students. The most frequently addressed single target with the high school group was rhythmic accuracy, followed by tempo, dynamics, and articulation, collectively representing approximately half as

many counts as rhythmic accuracy. Shorter and more frequent teacher talking episodes were observed within the high school sessions, indicating a faster rehearsal pace. The 2006 study compared rehearsal procedures of three expert college directors. Like the findings of the 2003 study, data revealed that all three conductors focused primarily on multiple targets simultaneously, dedicating approximately half of the observed selected rehearsal frame to conductor talk and the remaining time to student performance. Both of these studies will be discussed in more detail as each provides strong influence for the current study.

Ferley (2006) chose a “relatively high social-economic suburban” junior high band for a study designed to analyze effective and efficient rehearsals. Twenty-eight of 35 band students choose to participate in the study, 11 males, and 17 females. Extant research of pedagogical and rehearsal techniques was used to structure band rehearsals for 10 weeks. Surveys and journals were used to demonstrate opinion of rehearsal effectiveness and efficiency. Conclusions indicated that the majority of time was spent on student performance followed by “waiting” and instruction time. Students strongly agreed they were involved in rehearsals and responded positively to survey items assessing their perceptions of rehearsals.

Rehearsals by experts are shown to favor student performance time above most other time distribution categories of rehearsal. Instruction is shown to be most effective when done to address specifics of instructional targets, usually one target at a time with younger students. Off-task behavior is shown to occur most often during classroom time dedicated to teacher talk and during non-instructional time. Priorities of instructional targets differ from study to study, suggesting additional factors that may affect the importance of some rehearsal goals over others.

Expert Teaching at the Beginning Band Level

Expert teaching has been analyzed by researchers regarding all levels of formal education, though studies of expert teaching at the beginning band level have been few. The first such research was done in 2009 (Worthy & Thompson). Three expert beginning band teachers were observed and videotaped for three consecutive beginning band classes. Rehearsal targets used for frame analysis varied somewhat from studies performed with older students to reflect the unique setting. These include embouchure and posture/instrument carriage. Observation notes reveal that students were never left idle, teachers remained extremely mobile throughout the rehearsal, specific technical instruction was provided for each instrument type, and teachers allowed for recuperative periods. The recuperative activities allowed students to rest fingers, hands, and embouchures while engaged in non-playing instructional activities. The 25 selected rehearsal frames identified pitch accuracy, multiple targets, and posture/instrument carriage as the most frequent rehearsal target goals. Expert beginning band teachers were shown to model for greater proportions of time, longer durations, and at lower rates compared to expert teachers at other levels of band.

A study by Nicholson (2009) compared three expert beginning band teachers with three novice teachers. Field notes and videotaped rehearsals were used for data collection. Rehearsal targets were analyzed similarly to the study by Worthy and Thompson (2009). Expert teachers were extremely mobile and rarely conducted, while the novice teachers remained stationary and usually conducted. Expert teachers modeled much more often than the novice instructors. Experts usually did modeling on the various instruments. Novice teachers modeled much less than the experts and usually sang or counted. The novice teachers addressed pitch less than the

experts and addressed rhythm half the number of times compared to the experts. As is similar to findings at higher levels of band rehearsal, experts were shown to allow more student performance time than was allowed by novice teachers.

Instructional Diversity Between Experience Levels

Though already reported in some specific areas of research in this document, it is helpful to summarize studies that compare multiple levels of experience. In 1991, Westerman reported that novice directors and expert music directors demonstrate differences in relation to rehearsal planning and execution in that novice teachers are much more rigid in following plans and show levels of stress and indecision making when classroom dynamics and student behaviors create unpredicted happenings. Expert teachers demonstrated fluidity with rehearsal plans, being quick to modify their strategies yet accomplishing pre-planned goals.

The Goolsby studies (1996, 1997, 1999) are influential works; the 1996 study showed that expert conductors were shown to spend more time on ensemble play and less time on director talk. The more experienced conductors were also shown to be more specific than new teachers when giving feedback. Goolsby (1997) again showed less experienced teachers spent more time in teacher talk with less time for student performance. Novice teachers made tuning a priority and pre-service teachers spent their largest amount of time correcting wrong notes. The Goolsby study of 1999 compared expert and novice teacher behaviors demonstrated while preparing identical compositions. Expert teachers spent more time on student performance while novice teachers spent more time on verbal instruction. Novice teachers also stopped more frequently without providing instruction. Novices were observed starting the piece at the

beginning of the composition while experts started with transitional passages, followed by *tutti* passages, and finally the beginning.

Bergee (2005) compared two novices, one intermediate (graduate student), and one expert orchestral conductor. Each was “wired for sound” as to verbalize aloud their rehearsal aims while conducting. Conductors were interviewed and experts analyzed video of the rehearsals. Novice conductors focused on rhythm and cuing, and had difficulty performing multiple tasks. The intermediate conductor demonstrated stronger command of conducting processes, but did not verbalize. The expert conductor made few comments, avoiding surface comments, and focused on balance and style.

Irwin (2006) presented two videos of student teachers rehearsing a high school choir to 24 novice and 24 expert teachers. One videotaped rehearsal was designed to utilize rehearsal frames while the other was not. Expert and novice observers differed in their assessment of the videos showing significant difference between the two groups. Qualitative data summaries supported previous quantitative research data in the areas of pacing, conducting, and sequencing.

Music education research that compares teaching effectiveness of various levels of teaching experience show that older teachers most often possess advanced skills compared to less experienced (younger) teachers. These positive skills are shown to be evident in many varied aspects of rehearsal including communication effectiveness, conducting, correct sequencing, and use of rehearsal time. Teachers with more experience give priority to student performance versus teacher instruction while less experienced teachers spend more time in teacher talk behaviors. Rehearsal pace and rehearsal target priorities differ between more experienced and less experienced directors.

Conducting

Conducting has garnered considerable attention in pedagogical, curriculum, and research arenas in part due to its necessity as a learned skill that is largely absent from most musicians' experiences until they reach their third or fourth year of undergraduate study. The number of research studies is certainly increased by the work of D.M.A. conducting students who are required to write theses or dissertations. Conducting studies frequently offer findings outside of the act of gesture, including time use, teacher and student attitude, and intensity, often revealing the conductor as director/teacher.

Patterson (1984) studied conducting gestures used by high school choral conductors to communicate selected technical qualities, performance styles, and expressive events. An observation instrument (Observation Notation Chart) was constructed to identify gestures categorized by the four most common means of expression: body, arm, hand/finger, and head/face. Twenty-two selections performed by Illinois All-State ensembles were videotaped and choral conducting experts viewed the video. The data show that some gestures, especially facial, were used by over 50 percent of the conductors. All conductors mouthed the words.

A study by Graves (1984) looked at the choral conductor's effect on the interpretation of performance in a rehearsal. Using three interpretations of a Bach chorale, listeners were required to match a model recording to one in a set of three recordings, which had the same interpretation. Results of the study indicate no difference appearing between the different interpretive methods.

Grechesky (1985) examined the conducting behaviors of randomly selected high school bands in Central Indiana. Verbal and nonverbal behaviors were observed, categorized, and analyzed to determine how each affected band performance. Band experts evaluated audiotapes

that were musically representative of each band. Bands with the highest scores were designated as "musical" and those with the lowest scores were designated as "less musical." The eleven bands in the sample were videotaped in a rehearsal and performance for subsequent analysis. Data demonstrated that verbal imagery was more effective than explanations and that minimal time should be allowed for non-musical matters. Conductors with more body movement had bands that are more musical, approving facial expression had a positive impact, conductors with more hand coordination had better results, and emblems and illustrations combined with iconic behaviors had more effect than any other variables.

Sousa (1988) investigated the common nonverbal gestures taught and used by instrumental conductors, and the interpretation of these gestures by instrumental performers. A list of 55 specific nonverbal gestures commonly used by instrumental conductors to communicate musical concepts was established. Videotape was prepared utilizing one conductor demonstrating, without sound, each of the 55 gestures. The videotape was shown to junior high school, high school, and college instrumental performers to measure the effectiveness of the gestures to communicate specific musical ideas. Results show a significant difference between each group's ability to correctly identify each emblem. Older students identified significantly more gestures than younger students.

Moss (1989) studied rehearsal strategies in an instrumental music ensemble to examine the effects of four approaches on the number of repeated attempts (trials) used to improve critical passages prior to the conductor's decision to move on to other passages. The conductor could leave a problem either "satisfied or unsatisfied." Four approaches to rehearsing were observed: (1) use of standard rehearsal techniques paired with appropriate conducting (i.e., expressive), (2) use of standard rehearsal techniques paired with inappropriate conducting (i.e., mere time

beating), (3) non-rehearsed repetition of critical passages paired with appropriate conducting, and (4) non-rehearsed repetition of critical passages paired with inappropriate conducting. No significant difference in the average number of student performance trials was found between the use of standard rehearsal techniques and repetition of critical passages, or between the use of appropriate conducting and inappropriate conducting. A significant difference was found between the average number of student performance trials used when a stop was concluded with conductor satisfied versus unsatisfied, with more student performance trials counted when the conductor left satisfied. The results of the study raise questions concerning the presumption that fewer student performance trials indicate greater efficiency in rehearsing.

Taylor (1989) examined the effects of a sensitizing procedure, used by high school band conductors, on the ability of high school band students to perform selected articulation styles. Demographic data and band ratings in several performance quality categories were recorded and comparisons were drawn between conductors in the study groups and among these results and findings in other studies. A posttest revealed that no significant difference was found between the two groups in the accurate performance of articulation styles or the amount of time required to change from one articulation style to another. A significant difference was found among the performance accuracy of selected articulation styles, with legato receiving the highest ratings, followed by staccato, with marcato receiving the lowest ratings.

The purpose of a study by Sidoti (1990) was to determine the extent to which high school instrumentalists are able to perform selected musical expression markings, as inserted in several brief melodies, while following the conducting gestures of a conductor. Participants from four high schools were given a copy of four unmarked melodies to practice for three days (n=139). At the beginning of the practice period, subjects were also given a nine-question pencil and paper

quiz designed to determine the student's cognitive understanding of the eight musical markings. A significant difference was found between expressive and non-expressive conducting with performances being more accurate under expressive conducting. The eight expression markings were also significantly different between each school.

Mayne (1992) studied the use of facial expression by conductors to aid performers' ability to interpret common conducting gestures. Two videotapes were used showing a conductor demonstrating 53 common gestures with facial expression, and without facial expression. Junior high, high school, and college instrumentalists were asked to identify each gesture using a multiple choice test. Data indicated that the use of facial expression did not significantly increase correct responses. Similar to other studies, older students correctly identified more gestures than younger students.

In 1993, Laib examined performances of high school and college bands performing the same composition with expressive and non-expressive conductors. Each performance was recorded and evaluated by expert college band directors. The experts usually preferred the expressively conducted performances. A survey of the performers indicated that they preferred the expressive conductors.

Benge (1996) used video of two conductors for analysis to provide a vocabulary to describe non-verbal communication, identify movements of body and baton that stimulate expressive musicianship, compare conductor movement to vocabulary of Laban Movement Analysis (LMA), and to establish a practical basis for the improvement of conductor/teacher preparation programs. Experts in evaluating Laban movement were used to aid the researcher. Results show that conducting is a form of non-verbal communication and uses a universal vocabulary. Effective conductors seem to evoke gestures that have one meaning. Expressive

conductors seem to communicate large amounts of information to communicate interpretative information to performers.

An investigation by Kelly (1997) examined the effects of conducting instruction on beginning band students. Five beginning bands were assigned to a treatment group and five to a control group. All participants were pretested and posttested. The treatment group, which received conducting instruction, revealed significant improvement on individual rhythm reading skills and phrasing abilities. No differences were found with regard to articulations and dynamics.

Cofer (1998) investigated the effects of short-term gesture instruction on seventh-grade band students. Thirty students received the gesture instruction treatment and 30 students received a skill development/warm-up designed to reinforce musical expression. Results indicate that gesture instruction is effective in improving the recognition of conducting gestures.

Van Weelden (2002) attempted to investigate whether perceptions of a conductor's body type were a factor when judging the conductor and ensemble performances. The researcher also looked at the relationships between ensemble performance ratings and the conductor's visual appearance characteristics (eye contact, facial expression, and posture), evaluator confidence in the conductor, and overall conductor effectiveness were explored. There were moderate to moderately strong relationships between the performance ratings and conductor posture, conductor facial expression, evaluator's confidence in the conductor, and overall conducting effectiveness. Eye contact was not strongly related to performance ratings.

Johnson, Fredrickson, Achey, and Gentry (2003) identified five basic conducting elements from conducting texts and research. Videos of student and professional conductors were viewed for data collection. The evaluators were divided into three distinct groups, each

evaluating different conducting elements through different methods of observation. Results indicated that right arm use was key for student conductors and left arm and facial expression was key for professionals.

Bergee (2005) observed four conductors while each directed an orchestra: two novice conductors, one intermediate conductor, and one expert. Each conducted the same repertoire. Bergee reported that the novice and intermediate conductors worked from a pragmatic approach of addressing predetermined points of concern, while the expert did so but from an “internal ideal” of how the music was to be performed and how to communicate that with his conducting. Verbalizations indicated that the expert focused on balance and style while novices focused on rhythm accuracy and cuing.

The purpose of research by Kayoko (2005) was to explore the use of facial expressions for instrumental conductors. A second focus of this project was to explore the effectiveness of a set of exercises based on ideas from theoretical and philosophical approaches to facial expressions. The researcher trained three conducting students using suggested “encoding” exercises and, in addition, provided an exercise for “decoding” facial expressions for the ensembles. Observations of the participants' progress suggested that the encoding exercises were effective in developing their range of facial expressions. A survey taken by orchestral students who performed for each conductor revealed that the orchestra members' perceptions of the conductors' facial expressions were varied. The orchestra members were able to distinguish negative expressions from positive expressions. The orchestra members were able to distinguish high energy or strong expressions from low energy or weak expressions.

Research by Roebke (2005) was designed to examine and analyze the effect of specific nonverbal behaviors on music education majors' perceptions of teaching effectiveness in band.

College students from four universities observed one of two different videotaped teaching episodes. One tape revealed the conductor primarily exhibiting defined emblems. The other showed the conductor beating time. Observers were asked to rate the effectiveness of the teacher using a Perception of Teacher Effectiveness Measure (PTEM) developed by the researcher. Analysis of data revealed that conductors using conducting emblems were more effective.

Chapman (2007) investigated pedagogical practices of university undergraduate instrumental conducting instructors for involving expressive left hand technique and facial gestures. Fifty-three conducting pedagogues from large and small, rural and metropolitan universities responded to a questionnaire. The results of the questionnaire support opinion that current instruction of left hand techniques and facial gestures varies greatly from one instructor to the next.

Conducting As Related to Festival Ratings

Price and Chang (2005) examined the associations among conductor, ensemble expressivity, and festival ratings. Participants were asked to rate the expressivity of video-only conducting and parallel audio-only excerpts from a state concert festival. There were significant differences among scores for conducting across festival ratings. There were no significant differences for ensemble performance. No relationship was found between the conductor performance and ensemble performance.

Price (2006) repeated the Price and Chang (2005) study with 51 participants evaluating conducting and ensemble performance. As with the previous study, there were significant differences among scores for conducting across festival ratings. There were no significant

differences for ensemble performance. No relationship was found between the conductor performance and ensemble performance.

Music educators agree that conducting is an important skill for ensemble directors. Research seems to show that while expressive conducting can be more effective than non-expressive conducting, many conductors use limited expressivity in their gestures. Studies reveal that older students correctly recognize conducting gestures more than younger musicians and that older students respond more favorably to expressive conducting. Conducting as it relates to ensemble ratings at music festivals seems to show that expressive gestures have little effect. Most all conducting research suggests better training of conducting for ensemble members and conducting students. Many conducting studies additionally reveal the conductor as an educator with teaching responsibilities that extend beyond physical gestures.

Studies and Methodologies Most Related to the Researcher's Questions: Music Teaching Expertise as Measured by Student Performance Outcomes

Many studies dealing with best practice have encouraged further research in music education, including those that have specifically motivated this researcher's interest and the formulation of this current study.

One of the earliest studies that looked specifically at expert band director behaviors was done by Pontious (1982). He classified his research interests into three main categories: a) the affective environment of each rehearsal, b) the areas intended for correction, performance improvement, and c) the chosen methods for solving performance inaccuracies. He concluded that nearly 50% of all corrective verbalizations concerned phrasing, dynamics, and rhythm. Depending on the type of music and the nature of its compositional elements, certain types of

rehearsal targets were prioritized. Student performance class time proportion was observed at 58% with 42% being devoted to director verbalizations. Full ensemble performance was favored over section or individual performance using 86% of student performance time.

A study published in 1991 addressed effectiveness by looking at an observation procedure for differentiating teaching experience and expertise (Madsen & Standley, 1991). One hundred-fifty participants qualified for one of each of the following groups: college freshmen, college juniors, novice teachers, experienced teachers (degree + 1-10 years of experience), and expert music educators (degree, 10+ years). Each group watched 20 videotaped excerpts of music education scenarios and were asked to analyze and write extemporaneously about each excerpt. Responses were grouped as factual versus inferential. Each level of expertise revealed an increase in factual, rather than inferred observation. Mean variants were greatest between the two less experienced groups and smaller between the two middle groups. A “drastic” difference of mean score between expert and experienced conductors (with only 6.3 years of teaching average between them) indicated a variable other than simply years of experience. The differences between the expert and experienced group might suggest that by placing a teacher into a category of experienced or expert based on number of years teaching does not account for realized teacher skill levels/behaviors. Experts may exist who have less than 10 years of experience. Likewise, a teacher with 10+ years of experience may possess skill levels and behaviors more descriptive of that of novices.

Robert Duke (1999) reviewed experimental and descriptive research dedicated to instructional effectiveness. This collection included 86 articles (1977–1997). Though a number of these studies addressed student attentiveness, only 13 of the 86 measured student achievement. Duke recommends an expansion of the research base to include the “systematic

measurement of teaching effectiveness in relation to the accomplishment of instructional goals” (Duke 1999, p. 36). Though we consider experience as necessary to gain skill and intuition, this statement by Duke challenges researchers to look beyond years of experience in order to define expert teaching. Since the publication of this article in 1999, only a few additional studies have considered student achievement.

One such study, based on student achievement, was completed in 2006. Mark Montemayor (2006) examined video and audio recordings of twenty-nine high school band directors who were observed preparing the same music selection with their respective ensembles. Audio recordings of each band’s “read-through” performance at the conclusion of the first rehearsal were evaluated by experts to determine *a priori* ensemble performance quality. The second-day rehearsals were evaluated based on the Rehearsal Effectiveness Scale (Bergee, 1992). Selected rehearsal frames were also evaluated to report frequency and duration counts for specified rehearsal behaviors: pitch accuracy, rhythm accuracy, dynamics, tone/intonation, tempo, unspecified, and other. Each ensemble’s “before” and “after” student performance trials per target (n=404) were extracted from the recordings and then burned onto discs as pairs without any teacher verbalizations. A panel of evaluators judged the extent of the ensemble’s achievement on each target. Though performance quality and rehearsal effectiveness were positively and significantly correlated, the researcher reports no significant relationships between effectiveness scores and intra-rehearsal achievement. Similar findings were reported regarding selected rehearsal frame achievement or ratio of achievement based on total selected rehearsal frames. Montemayor reports that his findings demonstrate the limitations of considering student achievement as a basis for teacher evaluation. He also concludes that an ensemble’s extant skill level may contribute more to rehearsal achievement than does their conductor’s rehearsing. The

use of only two rehearsals for data collection may be too brief to evaluate rehearsal achievement and teacher effectiveness. The particular music selection, time of year, time of day, rehearsal pace, and pre-established rehearsal procedures may have also influenced the outcomes of this study.

The communicative skills required for successful teaching are important and advance the development of a teacher's ability to create rehearsals that "flow" well. The ability to adjust and adapt to the ever-changing classroom environment requires good communication skills as well as the ability to interact socially within the classroom so that teacher behaviors appear to be not only learned, but also intuitive. Juchniewicz (2008) looked at the influence of social intelligence on effective music teaching. Social intelligence is defined as an individual's ability to "decode" information perceived in human interaction. Forty music educators in Florida were selected for this study based on their nomination by music education experts. The selected educators were to be representative of "exemplary programs" and "more challenging programs." Each selected teacher was given an *Interpersonal Perception Task* (IPT-15), which measures social intelligence. Additionally, 12 teachers were randomly selected from the 40 original participants to be viewed by 84 external evaluators: 42 inservice music educators, and 42 pre-service music educators. The external evaluators were asked to rate each teacher using a 7-point Likert scale. The evaluators were asked to list the main teacher attributes that influenced their evaluation of each of the 12 randomly selected teaching experts. Videotape excerpts of each teacher from each category of "exemplary" and "challenged" were then evaluated using a Likert-type scale assessing effectiveness. The teachers were then placed in a category of "ineffective" or "effective." Results of the IPT-15 showed no significant differences between each category of teacher. The majority of attributes that influenced evaluators' ratings of teacher effectiveness

were social, affecting 85% of all responses. Expert evaluators identified ineffective teaching as largely attributed to unsuccessful classroom management.

In studies designed to look at behaviors of directors of large ensembles, comparisons are often made among groups of experts employed at various teaching levels. Rehearsals of college, high school, middle school, and beginner musicians have been studied to help determine how experts address different aspects of rehearsal. The Goolsby studies (1996, 1997, 1999) are seminal. Goolsby (1996) examined 10 expert, 10 novice, and 10 pre-service music educators. Fifteen teachers were high school conductors and 15 were from middle schools. Each conductor was videotaped during three rehearsals. Two of the rehearsals were used for analysis. Goolsby specifically looked at 15 performance variables, 10 rehearsal variables, and 3 sequential variables of instruction for each conductor. Variables included verbal instruction, non-verbal modeling, verbal discipline, and performance. Results indicated that the pre-service teachers talked the most of the three groups and included the least amount of student performance time. Experienced teachers spent most of their time in student performance and used more non-verbal modeling than the other teachers. Experienced teachers provided the most break time. Experienced conductors additionally divided the rehearsal more equally between skill development/warm-up and two music selections.

Goolsby (1997) designed a two-part study for analyzing verbal instruction in instrumental rehearsals. Thirty band directors were divided into three categories of pre-service, novice, and expert teachers. Middle school and high school levels were equally represented. Three videotaped rehearsals were made of each conductor, with the last two taped rehearsals being utilized for analysis. Goolsby measured variables similar to his 1996 study, using stopwatches and repeated viewings of the videotapes. Information regarding complete sequential patterns of

instruction was also collected. Expert teachers dedicated more of their rehearsal time to overall ensemble sound than did novice or pre-service teachers. Expert teachers also included more demonstrations, explanations, and guided listenings, with intonation receiving emphasis. Novice teachers made the tuning of individual notes the rehearsal priority. Pre-service teachers spent the largest amount of their time correcting wrong notes. Part 2 of the study was designed to determine changes in instruction of the pre-service teachers after participating in guided observations of expert teaching during an instrumental methods class. Pre-service teachers revealed reduced percentages of rehearsal time dedicated to wrong notes, with increased emphasis on rhythm, style, and tempo. The percentage of complete sequential patterns of instruction tripled for most pre-service teachers after minimal training.

The Goolsby study of 1999 compared expert and novice teacher behaviors demonstrated while preparing identical compositions. All rehearsals of the composition were videotaped from the sight-reading of the piece to the final performance. A total of 216 rehearsals were analyzed to establish frequency distribution for 30 performance and teaching variables and for sequential patterns of instruction. Five university band directors evaluated audio recordings of the final performances of the piece. Novice teachers spent more time teaching by rote. Expert teachers spent more time on student performance while novice teachers spent more time on verbal instruction. Novice teachers also stopped more frequently without providing instruction. Novices started the piece at the beginning while experts started with transitional passages, followed by *tutti* passages, and finally the beginning. Performances conducted by the expert teachers were evaluated as superior to those conducted by novice teachers.

Five expert middle school and five expert high school directors were studied by Cavitt (1998) to determine best practice in the area of error correction. Videotape of four consecutive

rehearsals was collected for all participants. The focus of the analysis was the rehearsal of concert repertoire. Time spent on repertoire was divided into selected rehearsal frames – segments of rehearsal devoted to the correction of performance errors. Selected rehearsal frames that included two or more performance trials, which represented 49% of total rehearsal time, were isolated for detailed analysis of error correction procedures. Rehearsal activities were examined in terms of rates, durations, and proportions of time devoted to various aspects of teacher and student behaviors, including student performance time and the content of teacher instructions, modeling and feedback. A total of 332 selected error correction rehearsal frames were analyzed. Teacher verbalization and modeling accounted for approximately 60% of the total time, with the remaining time devoted to full ensemble performance (19%), section performance (16%), and individual student performance (5%). Teacher talk episodes were frequent (M=5.4 per minute), brief (M=8 seconds), and comprised primarily directive verbalizations and feedback (52%), both averaging two per minute. The rate of negative feedback was double that of positive feedback. Selected rehearsal frames analysis demonstrated that experts most often addressed tone/intonation followed by articulation, rhythm, and multiple targets. Selected rehearsal frame analysis revealed no meaningful differences between middle school and high school directors' correction procedures. The process of error correction did vary systematically based on the type of error being targeted; intonation for example required a different pace and subsequent pattern of instruction than other targets.

Correcting these errors, according to Cavitt (1998, 2003), is approached similarly by experts. Cavitt reports that the most important finding in her study was that the pace of instruction varied with each error target, suggesting that the targeted error and the error correction process associated with it influence the rate of teacher-student interaction. Selected

rehearsal frames devoted to pitch accuracy targets and tone/intonation were highly interactive and had the highest mean rates of individual performance. Selected rehearsal frames that addressed rhythm targets comprised the greatest variety of teacher and student behaviors. Cavitt states, “Expert teachers understand implicitly that there is no single correction procedure that will effect change for all errors with all students. What does remain constant for the expert music conductor is the spontaneous decision-making process that teachers undergo to determine the next proposed solution” (Cavitt 1998, p. 5).

A study by Worthy (2003) was based on two separate rehearsal series from an intercollegiate honor band and a high school honor band. An expert conductor was observed rehearsing the same repertoire with a collegiate honor band and a high school honor band from the initial reading of the repertoire through the final performance. Rehearsal frames selected for further analysis from the college honor band totaled 3 hours and 57 minutes and those from the high school honor band accounted for 4 hours and 17 minutes. One hundred fifty-three selected rehearsal frames from the high school video footage and one hundred twenty-seven selected rehearsal frames from the college footage were identified and categorized by rehearsal target. Analysis of the collected data shows that when rehearsing the college-level ensemble, the conductor was more likely to focus on multiple targets simultaneously (46%) and focus on single targets with the high school students. The most frequently addressed single target with the high school group was rhythmic accuracy, followed by tempo, dynamics, and articulation, with each representing approximately half as many counts as rhythmic accuracy. Shorter and more frequent talking episodes were observed with the high school sessions, indicating a faster rehearsal pace. The percentage of conductor talk time was 49.41%, with a mean duration of 6.6 seconds per episode at a rate per minute of 4.5 in the high school selected rehearsal frames. The percentage

of student behavior dedicated to full ensemble performance represented the largest amount at 27.65%, followed by 11.79% devoted to section performance, and 1.83% to individual.

A somewhat similar study by Worthy (2006) compared rehearsal procedures of three expert college directors. Each was videotaped while preparing an intercollegiate honor band over a two-day period. Notes from on-site observations by the researcher were taken to ascertain characteristics that were common to each of the three subjects and were organized into categories of rehearsal organization, repertoire/score preparation, rehearsal techniques/strategies, and conducting/modeling. Like the findings of the 2003 study, data revealed that all three conductors focused on multiple targets simultaneously, 47%, 66%, and 33% respectively. Dynamics, articulation, and rhythm accuracy were the most frequented rehearsal targets. The average duration of the 149 selected rehearsal frames from all three conductors was approximately 2 minutes and 6 seconds. Worthy stated that each of the conductors had their own distinct style of conducting. Worthy further states, “Many characteristics of excellent teachers and conductors may appear to be ‘natural’ or ‘instinctive’ to a casual observer or novice teacher” (Worthy 2006, p. 61).

Most extant research shows that expert music teachers talk less in rehearsal than non-experts, increasing time dedicated to student performance. Experts are experienced and typically have taught for more than ten years. Research shows that experts teaching at various education levels share similar traits regarding the use of class time and the use of systematic procedures that allow for optimal learning. Expert teachers produce consistent high levels of student achievement.

Collectively, best practice studies form a sort of informal picture of the music teacher expert. Ultimately, research related to expertise asks, “What do experts do?” Music teacher

educators ask, “How do music educators best put what research tells us into practice?” Expert teaching should and does exist at all levels of instruction; however, we often look to the collegiate and professional level to find our examples of expertise. Duke and Simmons (2006) offered 19 teaching traits, which were shared by three world-renowned artists/private instrumental teachers (experts). Each trait was placed under the heading of three larger categories: Goals and Expectations, Effecting Change, and Conveying Information. Such studies outside the large ensemble setting reinforce findings from studies that focus on instructional strategies and behaviors that are shared among expert teachers at all levels of renown and experience. As more evidence of best practice emerges, educators continue to look at pragmatic use of research data to improve music teacher education. Lori-Anne Dolloff (1994) collected data over a three-year period aimed at the development of expertise of choral music teachers using extant best practice research information. A music teacher in-service project titled *The New York Choral Development Project* was implemented to immerse music education students in authentic contexts of teaching practice. Effective results for developing expertise were shown when music education students were able to watch expert teachers and alternate periods of implementation of observed behaviors with more observation and discussion with expert teachers. Dolloff recommends “a sustained, long-term commitment” to the cycle of observation, behavior implementation, and evaluation of effectiveness (Dolloff 1996, p. 239). This is indeed the primary goal of music teacher education.

CHAPTER 3

METHOD

The present study looked at high school band directing expertise as largely defined by a set of verbal and non-verbal behaviors possessed by directors of bands that consistently perform at high levels. As expertise is often associated with experience, five directors of high-performing bands were placed into matched pairs with five directors of low-performing bands based on similar years of experience, as well as professional backgrounds, and current teaching environments. The qualification for being identified as a director of a high-performing band or low-performing band was based on student achievement demonstrated through concert performance quality. Teaching behaviors demonstrated through rehearsal strategies/techniques and conducting were identified and examined to discover similarities among and differences between each group of directors. Teaching materials, including concert repertoire, were identified and recorded. Additionally, directors were interviewed to gather information related to their professional backgrounds, teaching philosophy, and their current teaching environment, factors that may aid each director's effectiveness or the quality of student performance. Field notes were collected and analyzed to further describe the rehearsal environment.

University Music Education and Wind Conducting professors in fifteen states were contacted in order to inform them of the purpose and procedures for the current research and inquire about high school band directors in their respective areas who might be willing to

participate in the study. The universities represented different areas of the country: West, Northwest, Midwest, Northeast, and Southeast. Sixty-one potential participants were initially contacted.

THE PARTICIPANTS

The participants represented a variety of ages and years of experience, teaching environments, and professional backgrounds. It was required that each director had a minimum of five years of experience and at least four years at their respective schools. The thirty-nine high school band directors who responded that they would be willing to participate in the research were asked to provide recordings of live performances of at least 20 minutes in length from concerts from the current or previous school year. Nine directors were female and thirty were male. Thirty-one directors supplied recordings and answered a 12-question survey designed to help place the directors into matched pairs.

1. What is your current age?
2. How many years do you have of band directing experience?
3. How many years have you been at your current school?
4. What degrees have you earned?
5. What are the official school size and school demographics? (An official school demographic document was requested during data collection)
6. What is your current budget amount? Does the budget amount come from music boosters and/or the school district?
7. How many minutes of rehearsal do you have every day of the school week?

8. When preparing for this concert, how much rehearsal has the ensemble had outside the school day? Does this include sectionals or private lessons taught specifically for the concert repertoire?
9. How many full-time band directors are at your school?
10. Is there ever anyone available to help you during your rehearsals?
11. How many schools feed your band program?
12. How many students currently take private lessons on a regular basis?

A panel of five university Music Education and Wind Conducting professors evaluated each concert recording. Similar to the 5-level scale for evaluating high school band performances used in most states, the present study utilized the Texas UIL Concert Adjudication rubric (see Appendix A). Evaluators were to assign each recording with a number rating of 1 (superior), 2 (excellent), 3 (average), 4 (below average), or 5 (poor) for each band. Ratings for each band were averaged, resulting in bands being classified into one of three categories: high-performing, a rating average of 1—1.49, middle-performing, 1.50—2.49, and low-performing, 2.50—5. The evaluations resulted in identifying 11 high-performing bands, 12 middle-performing bands, and 8 low-performing bands. The middle-performing group was withdrawn from the study leaving the directors of high-performing bands to be compared to the directors of low-performing bands.

After reviewing the pool of directors who had submitted recordings, careful consideration of the survey information allowed for five directors of high-performing bands to be matched with five directors of low-performing bands. All ten directors agreed to continue participating in the study. Each director was then asked to provide a spring semester schedule that included concert and contest dates. After using this information to arrange for data collection, directors were contacted to confirm dates and procedures during visitation (Appendix B). Videos of three

consecutive high school band rehearsals of each participant were then collected in the spring semester from band programs in seven different states: Alabama, Arizona, Georgia, Michigan, Minnesota, North Carolina, and Texas.

For purposes of anonymity, the directors of high-performing bands are identified as Directors A, B, C, D, and E. Directors of low-performing bands are identified as Directors L, M, N, O, and P. The Institutional Review Board of The University of Mississippi approved the purpose and procedures of this study. Written consent was received from each participant and from the principals of the directors' respective schools. Current demographics of each campus were provided on school letterhead, signed by each school's principal.

DESCRIPTION OF DIRECTORS IN MATCHED PAIRS DIRECTORS A & L

When rehearsals were videotaped (Spring 2010), Director A was in his 22nd year of teaching, with 11 years at his current school. Director L was in his 23rd year, with nine years at his current school. Both directors earned a bachelor degree in music education, both at a large state university. A full-time associate director worked at each participant's school and was available for providing assistance during rehearsals. Both participants taught in a multi-high school suburban school district. With similar school population demographics, Director A's high school had 1,951 students enrolled and Director L, 2,137. Facilities at each school included a large rehearsal space, and adjoining smaller spaces for sectionals and individual practice. Both high schools had two feeder middle schools. The band program of Director A had three concert bands numbering 59, 60, and 87 students (206 total). Director L had two concert bands numbering 78 and 165 (243 total). Funding was available from booster and district sources for

both directors, with Director A's available budget for 2010 estimated at \$15,200.00 and Director L's at \$10,000.00. Approximately 12.6% of students of Director A took private lessons on a regular basis, with Director L reporting 9.88%.

DESCRIPTION OF DIRECTORS IN MATCHED PAIRS DIRECTORS B & M

When rehearsals were videotaped (Spring 2010), Director B was in his 16th year of teaching, with 10 years at his current school. Director M was in his 17th year, also with 10 years at his current school. Both directors earned a master degree in music education, both at a regional state university. A full-time associate director worked at each participant's school and was available for providing assistance during rehearsals. Both directors worked in a multi-high school suburban school district. With similar school population demographics, Director B's high school had 1,370 students enrolled and Director M, 1,449. Facilities at each school included a large rehearsal space, and adjoining smaller spaces for sectionals and individual practice. Both high schools had two feeder middle schools. The band program of Director B had two concert bands numbering 68, 52 students (120 total). Director M had two concert bands numbering 68 and 70 (138 total). Funding was available from booster and district sources with Director B's available budget for 2010 estimated at \$11,850.00 and Director M's at \$16,000.00. Both directors reported that between 15% and 16% of students were taking private lessons on a regular basis.

DESCRIPTION OF DIRECTORS IN MATCHED PAIRS DIRECTORS C & N

When rehearsals were videotaped (Spring 2010), Director C was in his 10th year of teaching, with seven years at his current school. Director N was in his 12th year, with nine years at his current school. Both directors were attending school in the summer, working towards a master degree in music education, both at a large state university. A full-time associate director was employed at Director C's school and was available for assistance during rehearsals. Two full-time associate directors were employed at Director N's school and were available to assist during rehearsals. Director C was employed in a suburban school district that had two high schools. Director N was employed in a suburban school district with one high school. With similar school population demographics, Director C's high school had 2,019 students enrolled and Director N, 2,209. Facilities at each school included a large rehearsal space, and adjoining smaller spaces for sectionals and individual practice. Both high schools had two feeder middle schools. The band program of Director C had three concert bands numbering 55, 70, and 67 students (192 total). Director N had three concert bands numbering 75, 40, and 35 (150 total). Funding was available from booster and district sources with Director C's available budget for 2010 estimated at \$22,500.00 and Director N's at \$17,130.00. Director C reported that 16% of students took private lessons on a regular basis. Director N indicated 11%.

DESCRIPTION OF DIRECTORS IN MATCHED PAIRS DIRECTORS D & O

When rehearsals were videotaped (Spring 2010), Director D was in his 8th year of teaching, with six years at his current school. Director O was in his 8th year, also with six years at his current school. Both directors had earned a bachelor degree in music education. Both had

attended a large state university for their first degree. Director O had been working part-time towards a master degree in music education, attending a small regional college. Both schools had one feeder middle school, with the director of that school available for providing assistance during the high school rehearsals. Director O additionally had assistance on two class days from the high school choir director who was also certified as an instrumental and vocal music educator. Each director was employed in a town with one high school located within 30 miles of a large metropolitan city. With similar school population demographics, Director D's high school had 1,209 students enrolled and Director O, 1,384. Facilities at each school included a large rehearsal space, and adjoining smaller spaces for sectionals and individual practice. The band program of Director D had three concert bands numbering 65, 50, and 39 students (154 total). Director O had two concert bands numbering 55 and 91 (146 total). Funding was available from booster and district sources with Director D's available budget for 2010 estimated at \$8,600.00 and Director O's at \$15,150.00. Both Directors D and O reported that approximately 10% of their students took private lessons on a regular basis.

DESCRIPTION OF DIRECTORS IN MATCHED PAIRS DIRECTORS E & P

When rehearsals were videotaped (Spring 2010), Director E was in his 5th year of teaching, with 5 years at his current school. Director P was in his 5th year, with all 5 years at his current school. Both directors earned a bachelor degree in music education, both at a large state university. Both high schools had one feeder middle school. The middle school director was available for assistance 2—3 days of the week. Both directors taught in rural districts with one high school, both approximately 60 miles from a large metropolitan area. With similar school

population demographics, Director E's high school had 1,107 students enrolled and Director P, 1,019. Facilities at each school included a large rehearsal space, and adjoining smaller spaces for sectionals and individual practice. The band program of Director E had two concert bands numbering 58, and 68 students (126 total). Director P had two concert bands numbering 69 and 41 (110 total). Funding was available only from boosters for Director E, estimated at \$5,000.00. Funding was available for Director P from booster and district sources, estimated at \$9,340.00. Both directors reported two or three students who were taking private lessons on a consistent basis.

Setting

All ten participants were videotaped for three consecutive rehearsals in their usual rehearsal setting. A video camera was mounted on a tripod and positioned prior to rehearsals so that the conductor was in view. When the conductor left the podium, the camera was adjusted to keep the teacher in view. Video recording initiated when class time began as signified by each school's bell system. Video recording ended when class time ended, signified by the school bell. Students were informed prior to data collection that the researcher would be present for three days.

Observation Procedures

Using a video camera and field notes, the entire time allotment for each band class was recorded. Activities prior to and following the rehearsal of repertoire were analyzed as to inform possible contributions to the level of performance success of each band. Field notes were also

taken by the researcher to record activities and conductor behaviors prior, during, and after the rehearsal of repertoire.

Video Analysis

Using the videotape recordings, the total allocated class time was classified into the following categories: repertoire rehearsal, play-through performance, sight-reading, skill development/warm-up, and non-instructional time. Frequency, duration, and rate per minute were determined for each category. Statistical comparisons were made between and among directors of high-performing and low-performing bands and between the matched pairs of directors. Based on procedures utilized in previous research (Cavitt, 1998; Worthy 2003, 2006; Thompson, 2009; Nicholson, 2009) each video recording was viewed to identify all rehearsal frames, their instructional targets (Table 2; based on definitions by Cavitt, 1998), the number of student trials, and the total duration of each. Rehearsal frames are defined by Duke (1994,1999) as a portion of time dedicated to the accomplishment of a specific rehearsal target goal. Each rehearsal frame begins when the teacher implicitly or explicitly identifies a performance goal and continues until a subsequent goal is identified or the teacher moves on to a different passage in the music. The rehearsal target may or may not be accomplished during the rehearsal frame.

Table 1

Definitions of terms pertinent to this study

Chorale: harmonized simple tunes such as hymns.

Ear-training: listening/singing exercises designed to increase pitch (note), interval (distances between notes), and intonation (tuning) recognition and reproduction skills.

Table 1 (continued)

Embouchure: physical characteristics of the mouth, lips, and teeth for playing woodwind and brass instruments.

Meter: a pattern of strong and weak beats in music.

Mixed meter: a variety of different meters used to create patterns of strong and weak beats.

Rehearsal frame: segment of rehearsal defined when a target(s) is identified as the focus of rehearsal, followed by student trials. Frames end when a new or added target of rehearsal is identified.

Selected rehearsal frames: rehearsal frames that have been identified for additional analysis.

Sight-reading: performance trials of music that has not been rehearsed previously.

Student performance trials: student performances of sections of, or entire pieces of music for the purpose of improved or reinforced performance levels.

Note: the music ensemble known as a *band* has multiple synonyms: wind band, wind ensemble, concert band, symphonic band, and wind symphony.

Table 2

Definitions of Target Categories.

Articulation: The method in which the beginnings and endings of successive notes are performed. Articulation targets include note length, note shape, releases, accents, tonguing, and slurring.

Dynamics: Variations in volume, including crescendos, decrescendos, and the balance among instruments in the orchestration texture.

Tone/Intonation: The adjustment of the pitch level of a note or the adjustment of intervals related to a predetermined pitch standard or to the sounds within the music ensemble.

Pitch Accuracy: Performance of correct notes.

Rhythm: All aspects of timing as related to meter and tempo, including rhythmic precision among ensemble members and the grouping of musical sounds by means of duration and stress.

Tempo: The speed at which the beat of the music is performed. This target includes retardandos, accelerandos, rushing the intended tempo, slowing the intended tempo, and transitions in tempi.

Table 2 (continued)

Technique: Woodwind and brass fingerings, trombone slide technique, percussion sticking technique, and other aspects of motor skills including hand position, posture, and physical aspects of breathing, embouchure, and oral mechanics.

Unidentified: No discernible target is identified by the teacher, yet the teacher directs the performers to repeat a single passage of music without verbalizing any specific targets.

Multiple Targets (2), (3), or (4): The director gives attention to two, three, or four target categories in a single rehearsal frame.

Other: Any target that does not subscribe to any of the target definitions presented.

Rehearsal frames with two or more student performance trials (selected rehearsal frames) were further analyzed to identify frequency, duration, and rate per minute of selected teacher and student behaviors including teacher talk, teacher modeling and student performance, student talk, student performance approximations, and marking music. Teacher verbalizations were categorized as directives, information, positive feedback, negative feedback, questions, and addressing off-task behavior (see Table 3). Modeling was categorized as positive modeling or negative modeling. Student performance behaviors included full ensemble performance, section performance, and individual performance. Student behaviors of student talk and marking music were also observed and recorded (see Table 3).

Table 3

Definitions of Teacher and Student Behaviors.

Teacher Verbalization and Modeling Categories

Teacher Talk: This includes all teacher verbalizations, with the exception of those defined in the modeling categories below.

Table 3 (continued)

Directives: This category includes general and specific instructions regarding how to play in a subsequent performance trial. These may refer to musical expression or technical aspects. Directives may also include instructions to mark music, where to start and stop, or any other verbalizations that direct students to perform the next task.

Information: This includes any verbalization by the teacher that conveys information about the subject matter but does not require the student(s) to perform any specific action.

Positive Feedback: General or specific positive verbal evaluations of student performance.

Negative Feedback: General or specific negative verbal evaluations of student performance.

Questions: Any question posed by the teacher that does or does not require student response. May pertain to “on task” or “off task” behaviors.

Off-task: Teacher verbalizations made that address off-task student behavior (i.e. “John, why are you doing that?”). These do not include questions.

Modeling: Teacher verbally or physically demonstrates any aspect of the composition or physical facility required to perform the music or a performance approximation.

Positive Modeling: Teacher verbally or physically demonstrates correct performance or an approximation of correct performance.

Negative Modeling: Teacher verbally or physically demonstrates incorrect performance or an approximation of incorrect performance.

Student Behavior Categories

Student Performance: Any student performance where the music is replicated in some form including students performing on their instruments or using performance approximations (i.e. clapping, singing, conducting, etc.)

Full Ensemble Performance: Student performance trial where all students play instruments as reflected by the music score (some students parts may have them tacet)

Section Performance: Other than full ensemble performance, student performance where two or more members of the ensemble play.

Individual Performance: Student performance where only one student plays.

Performance Approximations: Any performance in which the music is modified or altered in some way (e.g. singing, clapping, counting, conducting, fingering, and any other means of replicating the music in some form). Includes performance by individuals, sections, or full ensemble.

Table 3 (continued)

Student Talk: Any individual student verbalization, including questions and responses to teacher questions, for on-task and off-task comments.

Marking Music: Students write on their sheet music to indicate performance instructions given by the teacher, or personally derived reminders.

Video was analyzed for frequency, duration, and rate per minute using observation software: *SCRIBE (Simple Computer Recording Interface for Behavioral Evaluation. Version 4.1)* (Duke & Stammen, 2007). This software allows users to label discernable events during live or video observation, customizing label categories as needed based on the uniqueness of each user's analysis purpose.

Video of each rehearsal was additionally used for evaluating the conducting skills of each director. Conducting excerpts were selected from portions of rehearsal classified as play-through time (not rehearsal segments) as to best represent how each director would conduct on a concert. Using a conducting evaluation rubric designed by the researcher (Appendix C), participating directors were evaluated by a panel of five expert conductors on eight specific components of conducting: right hand use, left hand use, beat pattern, musical gestures, confidence, plane height, facial use, and starts and stops. The evaluations were used to compare conducting skill levels among and between directors of high-performing bands versus directors of low-performing bands.

Field Notes

Field notes were taken to record the researcher's general impressions of characteristics of each director and each rehearsal. Field note recordings started when class officially began as

signaled by the school bell system to include all class time activities: set-up, skill development/warm-up, sight-reading, repertoire rehearsal, transition time between music activities, and pack-up time. These notes further reflected overt themes of general classroom atmosphere, classroom organization, director and student rapport, teaching materials/repertoire selection, and classroom management. Field notes were additionally used to corroborate video and interview data among and between directors of high-performing bands versus directors of low-performing bands.

Interviews

Interviews were conducted to provide data useful in studying professional and teaching environment commonalities and differences among and between directors in both groups. Interviews with directors took place after the video and field note data were obtained as to not create bias, possibly influencing the researcher's field notes. Interviews were conducted with each director at their respective schools. Interviews included the following questions:

Interview Question 1. What methods do you use to prepare for each rehearsal (rehearsal videos, audio recordings, lesson plans, score study, etc.)?

Interview Question 2. Describe your consumption of and participation in music activities outside of your school-related responsibilities.

Interview Question 3. Describe your involvement in local, state, and national music teacher organizations, activities, conventions, camps, symposiums, workshops, etc.

Interview Question 4. What is your level of expectation for the performance quality of your premiere ensemble?

Interview Question 5. Are you aware of what music education research tells us about the most effective ways to rehearse bands?

Interview Question 6. Considering your current teaching resources and teaching environment, what improvements would you like to see made that you feel would positively affect the quality of student performance? What do you feel are some of the possible methods for making improvements?

Interview Question 7. What is your philosophy of music education/ band education?

Interview Question 8. Is there anything about yourself or your program you would like to share that has not been covered?

RELIABILITY

For purposes of reliability, two independent observers identified allocated class time categories and selected rehearsal frame targets, and calculated frequency and duration measures on approximately 25% of all collected video recordings. Independent observers were researcher/practitioners who received sufficient training on all procedures, definitions, and equipment. Reliability was calculated at 100% for allocated class time categories and approximately 96% for rehearsal frame target categories.

DELIMITATIONS OF THE STUDY

The ten participants of the study are distinctive to this study. Statistical information and its interpretation as presented here are unique to the directors that participated and may not be representative of all directors from all populations. Though attempts were made to represent different areas of the country, schools with varying demographics, schools of various sizes, rural, urban and suburban school districts, both sexes and various races of directors, the effort to “match” each director with a counterpart based on professional and teaching environment

commonalities inadvertently lessened certain aspects of diversity: only one director represents a minority race. All participants were male. There were no urban schools represented.

Shared behaviors between and among each group of directors show pedagogical actions that may aid current and future band directors, though it cannot be assumed nor concluded that replication of these behaviors would in and of themselves produce either high-performing or low-performing bands.

The observation research presented here is context specific in that directors were observed and videotaped two weeks prior to a contest. Preparation for contest can involve specific and calculated changes in band rehearsals depending on the director and other possible school related factors. Behaviors and interpretation of the data may not apply to all times of the year where pedagogical decisions are made based on various curriculum aims.

Presence of the researcher and a video camera in the usual teacher/student environment may have influenced teacher and or student behaviors.

CHAPTER 4

RESULTS

Based on audio recordings evaluated by five expert university wind conductors, ten high school band directors were classified into one of two categories, directors of high-performing bands or directors low-performing bands. Each of the five directors in each category was observed and videotaped over a three-day period within two weeks preceding a music festival performance. Prior to the collection of data, one director from each category was matched with a director from the other category based on criteria that included years of experience, educational background, current teaching environment, age, and years in their current position. The investigator took field notes during each recorded rehearsal. At the conclusion of each three-day observation period, an interview was held with each respective participant. Using the collected video recordings, a panel of five expert wind conductors evaluated each director's conducting during rehearsal segments where the performance of repertoire was not preceded by explicit instructions for improvement (play-through performance). Additionally, teaching materials including method books, chorales, handouts, and repertoire were identified for analyzing what teaching materials were used among and between both groups of directors. The resulting data allowed for comparative analysis between and among directors of high-performing and low-performing groups and between the matched pairs of directors. Results presented in this chapter are based on the initial research questions posed in Chapter 1 and listed below, presented first in

this chapter for the groups of directors of high-performing and low-performing bands, followed by analysis results for the matched pairs of directors.

1. When analyzing classroom behaviors that are shared and different between and among directors of high-performing and low-performing high school bands, what proportions of each director's entire allotted classroom time are devoted to the following five categories: repertoire rehearsal, play-through performance (music not explicitly receiving instruction), skill development/warm-up, sight-reading, and non-instructional time use? How do these proportion allocations compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?
2. What are the frequencies, rates per minute, durations, and time allocations for each selected rehearsal frame target category between and among directors of high-performing and low-performing high school bands? How do these statistics compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?
3. What are the frequencies, rates per minute, durations, and time allocations of specific teacher and student behaviors observed in selected rehearsal frames between and among directors of high-performing and low-performing high school bands? How do these statistics compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?
4. What conducting behaviors are shared and are different between and among directors of high-performing and low-performing high school bands? How do these behaviors compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?
5. What non-rehearsal attributes (age, experience, education, teaching environment, philosophy, etc.), which may contribute to teaching quality, performance quality, and conducting behaviors, are different and shared between and among directors of high-performing and low-performing high school bands? How do these attributes compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?
6. What skill development/warm-up, sight-reading, and repertoire materials are used between and among directors of high-performing and low-performing high school bands?

COMPARATIVE ANALYSIS OF DIRECTORS OF HIGH-PERFORMING
AND LOW-PERFORMING BANDS:
USE OF TOTAL ALLOCATED CLASS TIME

The complete video recordings were analyzed to determine the use of total class time for each of the ten participants during rehearsals of each band program’s premiere wind ensemble. Directors of high-performing bands (Directors A-E) contributed 810 minutes of total class time, with the average class period lasting 54 minutes. Directors of low-performing bands (Directors L-P) contributed 825 minutes of total class time with the average class period lasting 55 minutes. Class time usage was classified into five categories: repertoire rehearsal, play-through performance, skill development/warm-up, sight-reading, and non-instructional time use.

Table 4 includes the proportions of time dedicated to the five time use categories by all ten directors. Each director of a high-performing ensemble spent time in each of the five categories. Among directors A-E, the largest percentage of class time was dedicated to repertoire rehearsal (47.55%). Similar to Directors A-E, among Directors L-P, the largest use of class time was for repertoire rehearsal (46.47%). Each director of low-performing bands spent time in each category except sight-reading; only Director P spent any time sight-reading, singularly accounting for the total percent reported for all directors of low-performing bands (1.56%).

Table 4

Use of Total Allocation of Class Time by Directors of High-Performing Bands Expressed in Minutes and Percent of Total Available Class Time, Including Group Mean Amounts.

Director	Total Class Time	Skill Development/Warm-up	Sight Reading	Repertoire Rehearsal	Play-Through Performance	Non-Instructional Time
A	165.00	14.70 8.9%	18.18 11.02%	86.58 52.47%	26.32 15.96%	19.22 11.65%

Table 4 (continued)

B	159.00	18.12 11.40%	6.00 3.77%	71.63 45.05%	34.20 21.51%	29.05 18.27%
C	180.00	16.03 8.91%	26.22 14.57%	86.15 47.86%	30.242 16.79%	21.36 11.87%
D	156.00	17.55 11.25%	18.00 11.54%	72.12 46.23%	30.33 19.44%	18.00 11.54%
E	150.00	29.62 19.75%	8.98 5.99%	69.23 46.15%	26.32 17.54%	15.85 10.57%
A-E mean	162.00	192.4 12.04%	15.48 9.38%	77.14 47.55%	29.48 18.25%	20.70 12.78%

Use of Total Allocation of Class Time by Directors of Low-Performing Bands Expressed in Minutes and Percent of Total Available Class Time, Including Group Mean Amounts.

Director	Total Class Time	Skill- Development/ Warm-up	Sight Reading	Repertoire Rehearsal	Play- through Performance	Non- Instructional Time
L	180.00	10.17 5.65%	0.00 0.00%	87.91 48.84%	35.79 19.88%	46.13 25.63%
M	165.00	8.88 5.38%	0.00 0.00%	78.81 47.76%	25.43 15.42%	51.88 31.44%
N	180.00	8.32 4.62%	0.00 0.00%	85.54 47.52%	32.27 17.93%	53.87 29.93%
O	150.00	8.93 5.95%	0.00 0.00%	69.23 46.15%	23.20 15.48%	48.63 32.42%
P	150.00	29.88 19.99%	11.67 7.78%	62.98 41.99%	23.87 15.91%	21.50 14.33%
L-P mean	165.00	13.26 8.32%	11.67 1.56%	76.89 46.47%	28.1 16.90%	44.40 26.75%

Directors A-E spent 12.78% of class time in non-instructional activities, while directors of low-performing bands spent 26.75%. Table 5 shows non-instructional time divided into sub-categories that include set-up time (prior to the start of any rehearsal), transitional time between

various rehearsal activities, and pack-up time (time after rehearsal has ended and before the dismal bell rings). The mean set-up time for Directors A-E was 6.62 minutes over all three days, which accounted for a mean proportion of 4.07% of total class time. The mean pack-up time was less at 5.02 minutes over three days for 3.10% of class time. Transitions accounted for the greatest amount of non-instructional time at 9.06 minutes, 5.61% of class time.

Non-instructional time for Directors L-P, as shown in Table 5, reveals that the mean set-up time was 11.76 minutes, accounting for 7.03% of total class time. Pack-up time was demonstrated using slightly less class time, with a mean of 11.38 minutes allocated for 6.92%. Transitions received the largest percentage of class time with 12.79%, a mean of 21.26 minutes over the three days of rehearsal.

Table 5

Non-Instructional Categories for Directors of High-Performing Bands by Total Allocation of Class Time Per Director and Total Minutes, and Repertoire Rehearsal Time Percentage.

Director	Total Class Time	Set-Up Time	Transition Time	Pack-Up Time	Non-Instructional Time and % Totals
A	165.00	7.93 4.81%	6.28 3.81%	5.00 3.03%	19.22 11.65%
B	159.00	8.50 5.35%	9.48 5.96%	11.07 6.96%	29.05 18.27%
C	180.00	6.05 3.36%	10.85 6.03%	4.47 2.48%	21.36 11.87%
D	156.00	5.7 3.56%	10.25 6.57%	2.05 1.31%	18.00 11.54%
E	150.00	4.92 3.28%	8.42 5.61%	2.52 1.68%	15.85 10.57%
A-E mean	162.00	6.62 4.07%	9.06 5.61%	5.02 3.10%	20.70 12.78%

Table 5 (continued)

Non-Instructional Categories for Directors of Low-Performing Bands by Total Allocation of Class Time Per Director and Total Minutes, and Repertoire Rehearsal Time Percentage.

Director	Total Class Time	Set-Up Time	Transition Time	Pack-Up Time	Non-Instructional Time and % Totals
L	180.00	15.05 8.36%	22.02 12.13%	9.07 5.04%	46.13 25.63%
M	165.00	12.83 7.78%	25.15 15.24%	13.90 8.42%	51.88 31.44%
N	180.00	14.48 8.04%	25.78 14.32%	13.60 7.56%	53.87 29.93%
O	150.00	10.42 6.95%	23.37 15.58%	14.85 9.90%	48.63 32.42%
P	150.00	6.02 4.01%	10.00 6.67%	5.48 3.65%	21.50 14.33%
L-P mean	165.00	11.76 7.03%	21.26 12.79%	11.38 6.92%	44.40 26.75%

SELECTED FRAME AND TRIAL COMPARATIVE ANALYSIS FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS

To further describe and compare behaviors of band directors of high-performing and low-performing bands, repertoire rehearsal frames with two or more student performance trials (selected rehearsal frames) were identified and categorized by their target to determine frequency, rate per minute, and duration for each category. Frames with only a single student performance trial were not included as part of the analysis as each may not clearly define teacher-centric repertoire improvement. Of selected rehearsal frames, directors of high-performing bands collectively contributed 335 minutes 35 seconds of rehearsal and directors of low-performing bands, 307 minutes 14 seconds. Selected rehearsal frames identified for analysis

numbered 176 (41.43% of total class time) for Directors A-E and 178 (37.24% of total class time) for Directors L-P.

For directors of high-performing bands, the mean number of selected rehearsal frames per class period was 35.6. Table 6 shows that Director E had the least amount of selected rehearsal frames with 27. Director A and C had the most with 39 each. Selected rehearsal frames for this group of directors ranged in length from 12 seconds to 9 minutes 12 seconds with an average duration of 1 minute 55 seconds. Director B rehearsed at the fastest frame-pace averaging one frame every 1 minute 41 seconds and Director E rehearsed at the slowest frame-pace averaging one frame every 2 minutes 20 seconds.

Table 6

Selected Rehearsal Frame Duration and Percent Proportion of Total Rehearsal Time Per Director and Frequency of Frames and Trials with Rate Per Minute and Mean Durations for Directors of High-Performing Bands.

	Rehearsal Frame Duration in min.	Frames	Frames per min.	Frame Mean Duration in min.	Trials	Trials per min.	Trial Mean Duration in sec.
A	70.53 42.75%	39	.55	1.81	273	3.87	15.50
B	64.18 40.36%	38	.59	1.69	224	3.49	17.19
C	72.70 40.39%	39	.54	1.86	314	4.32	13.89
D	65.32 41.87%	33	.51	1.98	226	3.46	17.34
E	62.85 41.90%	27	.43	2.33	220	3.50	17.14
total	335.58	176			1257		
mean	67.12 41.43%	35.6	.52	1.91	251.4	3.75	16.02

Table 6 (continued)

Selected Rehearsal Frame Duration and Percent Proportion of Total Rehearsal Time Per Director and Frequency of Frames and Trials with Rate Per Minute and Mean Durations for Directors of Low-Performing Bands

	Rehearsal Frame Duration in min.	Frames	Frames per min.	Frame Mean Duration in min.	Trials	Trials per min.	Trial Mean Duration in sec.
L	68.58 38.10%	33	.48	2.08	148	2.16	27.80
M	55.43 33.59%	30	.54	1.85	133	2.40	25.00
N	66.77 37.09%	44	.66	1.52	150	2.25	26.70
O	59.30 39.53%	46	.78	1.29	172	2.90	20.69
P	57.15 38.10%	27	.47	2.12	143	2.50	23.98
total	307.23	178			746		
mean	61.45 37.24%	36	.58	1.73	149.2	2.43	24.71

For directors of low-performing bands, the mean number of selected rehearsal frames per class period was 36. Director P had the least amount with 27 and Director O had the most with 46. Selected rehearsal frames for this group of directors ranged in length from 19 seconds to 7 minutes 4 seconds with an average length of 1 minute and 44 seconds. Director O rehearsed at the fastest pace averaging one frame every 1 minute 17 seconds and Director P rehearsed at the slowest pace averaging one frame every 2 minutes 7 seconds.

ANALYSIS OF TARGET CATEGORIES DURING SELECTED REHEARSAL FRAMES FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS

Table 7 shows duration and mean proportions dedicated to specific rehearsal targets within selected rehearsal frames. Of the twelve rehearsal frame categories (articulation,

dynamics, other, pitch accuracy, rhythm, technique, tempo, tone/intonation, unidentified, multiple targets [2], multiple targets [3], and multiple targets [4]), directors of high-performing bands were most often observed addressing tone/intonation for 23.80% of selected rehearsal frame duration, followed by articulation (20.54%), and rhythm (18.47%).

Table 7

Rehearsal Target Categories, Frame Totals, and Trial Totals by Target Priority Based on Percent of Selected Rehearsal Frame Time Used.

Directors A-E:				Directors L-P:			
Target	%	Frames	Trials	Target	%	Frames	Trials
Tone/Intonation	23.80	39	543	Tone/Intonation	17.54	18	229
Articulation	20.54	32	166	Articulation	17.24	28	118
Rhythm	18.47	32	300	Rhythm	16.56	31	137
Tempo	10.86	17	70	Pitch Accuracy	12.90	13	30
Dynamics	10.05	16	63	Dynamics	9.18	21	48
Multiple (2)	9.80	19	61	Multiple (3)	8.81	8	18
Multiple (3)	2.09	4	9	Tempo	4.96	14	32
Pitch Accuracy	1.82	6	9	Multiple (2)	3.92	24	84
Other	1.25	6	12	Other	3.23	5	10
Technique	1.10	3	10	Unidentified	2.78	9	19
Unidentified	.22	2	4	Technique	2.36	6	19
Multiple (4)	0.00	0	0	Multiple (4)	.52	1	2
Totals	100.00	176	1257	Totals	100.00	178	746
Mean in min.		1.91	.27	Mean in min.		1.73	.41

Note: Total amount of selected rehearsal frame duration for Directors A-E: 335.58 minutes.
Total amount of selected rehearsal frame duration for Directors L-P: 307.23 minutes.

Analysis of time proportion per target indicated that Directors A, C and D prioritized tone/intonation as their first or second most addressed target, with Director E placing it third and Director B placing it fourth.

For Directors A-E, mean selected rehearsal frame duration was similar for four of the five targets utilizing the largest proportion of time (tone/intonation, articulation, tempo, and dynamics), with just over 2 minutes each. Mean student performance *trial* duration within selected rehearsal frames revealed a priority to multiple targets (3) with 46.67 seconds per student performance trial. For directors of high-performing bands, rehearsal targets of technique, pitch accuracy, other, and unidentified each accounted for less than 2% of time devoted to selected rehearsal frames. No frames for the category of multiple targets (4) were recorded.

Table 7 indicates directors of low-performing bands were most often observed addressing tone/intonation for 17.54% of selected rehearsal frame duration, followed by articulation (17.24%) and rhythm (16.56%). The highest mean selected rehearsal frame duration of all twelve targets was multiple targets (3) at 3 minutes 23 seconds per frame, followed by pitch accuracy with 3 minutes 3 seconds, and tone/intonation with 2 minutes and 59 seconds. Analysis of student performance *trial* durations indicated that multiple targets (3) had the longest mean student performance trial duration at 1 minute 30 seconds followed by pitch at 1 minute 19 seconds, other with 59 seconds, and multiple targets (4) with 50 seconds. Regarding frequency of student performance trials, Directors L, N, P, and O demonstrated tone/intonation as their most frequented target, with Director M placing it fifth.

Although both groups of directors dedicated the most selected rehearsal frame duration to tone/intonation (A-E, 23.80% and L-P, 17.54%), articulation (A-E 20.54% and L-P 17.24%), and rhythm (A-E 18.47% and L-P 16.56%), the remaining nine categories differ regarding proportion

of selected frame duration toward each target and with the time distribution across each remaining target category. Analysis of selected rehearsal frame targets ranked by mean proportion of time reveals a clear demarcation between the top six and bottom six target categories for both sets of directors. The target ranked seventh by Directors A-E (multiple targets [3] with 2.09%) is more than four times less than the mean time proportion shown for the targets ranked first through sixth. The difference between the seventh ranked target for Directors L-P and those ranked first through sixth is nearly one half.

Frequency counts of student performance trials within each selected rehearsal frame category revealed that directors of high-performing bands spent 95.70% of student performance trials on targets demonstrated as the six most addressed in rehearsal, with 4.30% of student performance trials devoted to the six least addressed targets. Directors for low-performing bands demonstrated that 77.75% of student performance trials were spent on selected rehearsal frame targets demonstrated as the six most addressed and 22.25% to targets ranked 7—12. Selected rehearsal frames for directors of low-performing bands were more evenly distributed across all targets and demonstrated a more gradual decline in frequency as targets received less rehearsal time priority.

Directors A-E demonstrated that when rehearsing frames with multiple targets (2 or more), 23 frames were utilized that included 70 student performance trials. Directors L-P utilized 33 frames that included 104 student performance trials.

TEACHER AND STUDENT BEHAVIORS WITHIN SELECTED REHEARSAL FRAMES FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS

Selected rehearsal frames were further analyzed by looking at various teacher and student behaviors found within each selected rehearsal frame and within each target category. This next stratum of analysis includes teacher behaviors of teacher talk and teacher modeling. Teacher talk was classified into the following categories: directives, information, positive feedback, negative feedback, answering or asking questions, and addressing off-task behavior. Teacher modeling was categorized specifically as being either positive modeling or negative modeling. Student behaviors were categorized using: full ensemble performance (when used for target improvement and not play-through time), section performance, individual performance, performance approximations (clapping, singing, etc.), student talk (off-task behavior or asking or answering questions), and marking music.

Table 8 shows directors of high-performing bands spent 47.92% of selected rehearsal frame durations engaged in teacher behaviors (teacher talk and modeling) and 53.23% of time engaging students in student behaviors (performance, performance approximations, talking, and marking music).

Table 8

Frequency, Time Totals, Mean Duration, Rate Per Minute, and Percentage of Selected Rehearsal Frame Duration for Teacher and Student Behaviors for Directors of High-Performing Bands. (total rehearsal frame time=335.58 minutes, 176 selected rehearsal frames)

Directors A-E:

Teacher Behaviors	<i>f</i>	time in min.	mean in sec.	rate per min.	%
Teacher Talk Totals	1826	130.27	4.28	5.44	38.99
Directives	749	81.10	6.49	2.23	24.17
Information	213	13.18	3.71	.63	3.93
Positive Feedback	294	12.18	2.48	.87	3.63
Negative Feedback	483	18.99	2.36	1.43	5.67
Questions	86	4.87	3.43	.26	1.45
Off-Task Behavior	10	.47	2.90	.03	.14

Table 8 (continued)

Teacher Modeling Totals	408	29.98	4.43	1.22	8.93
Positive Modeling	329	24.41	4.46	.98	7.27
Negative Modeling	79	5.57	4.22	.23	1.66
Teacher Behaviors summary	2234	160.25	4.30	6.57	47.92
<hr/>					
Student Behaviors		time	mean	rate	
	<i>f</i>	in min.	in sec.	per min.	%
Combined Performance	1050	144.86	8.28	7.25	43.17
Full Ensemble	256	56.40	13.20	.76	16.81
Section	442	61.29	8.32	1.32	18.26
Individual	352	27.17	4.63	1.05	8.10
Performance Approximations	207	16.55	4.84	.62	4.93
Student Talk	103	4.91	2.87	.31	1.46
Marking Music	153	8.97	3.52	.46	2.67
Student Behaviors summary	1513	175.29	6.95	4.51	53.23

Table 9 shows directors of low-performing bands spent 53.60% of selected rehearsal frame duration engaged in teacher behaviors and 46.64% of time engaging students in student behaviors. The priority of teacher versus student behaviors is reversed between the two groups of directors, with Directors A-E dedicating 5.33% more time to student behaviors than teacher behaviors, and Directors L-P dedicating 6.95% more time dedicated to teacher behaviors. All five directors of high-performing bands dedicated more than 51% of selected rehearsal frames to *student* behaviors. All five directors of low-performing bands dedicated more than 52% of selected rehearsal frames to *teacher* behaviors. For Directors A-E, teacher talk accounted for 38.99% of selected rehearsal frame duration and student performance for 43.17% (full ensemble performance, section performance, individual performance). In contrast, Directors L-P dedicated 51.42% of selected rehearsal frame time to teacher talk and 43.61% to student performance.

Table 9

*Frequency, Time Totals, Mean Duration, Rate Per Minute, and Percentage of Selected Rehearsal Frame Duration for Teacher and Student Behaviors for Directors of Low-Performing Bands.
(total rehearsal frame time=307.23 minutes, 178 selected rehearsal frames)*

Directors L-P:

Teacher Behaviors	<i>f</i>	time in min.	mean in sec.	rate per min.	%
Teacher Talk Totals	1739	157.00	5.42	5.66	51.42
Directives	813	104.54	7.70	2.65	34.03
Information	26	3.55	8.62	.08	1.16
Positive Feedback	378	15.70	2.49	1.23	5.11
Negative Feedback	426	19.50	2.74	1.39	6.35
Questions	25	3.17	7.64	.08	1.03
Off-Task Behavior	67	11.49	10.30	.22	3.74
Teacher Modeling Totals	75	6.71	5.36	.24	2.18
Positive Modeling	42	4.04	5.88	.14	1.31
Negative Modeling	33	2.65	4.85	.11	.87
Director Behaviors summary	1814	163.71	5.41	5.90	53.60
Student Behaviors	<i>f</i>	time in min.	mean in sec.	rate per min.	%
Combined Performance	720	133.97	11.16	5.37	43.61
Full Ensemble	331	68.57	12.43	1.08	22.32
Section	108	25.70	14.42	.35	8.37
Individual	281	39.70	8.48	.91	12.92
Performance Approximations	14	1.73	7.43	.05	.56
Student Talk	40	4.55	6.85	.13	1.48
Marking Music	21	3.03	8.67	.07	.99
Teacher Behaviors summary	795	141.55	10.68	2.59	46.64

TEACHER BEHAVIORS
FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS:
TEACHER TALK

Teacher talk accounted for 38.99% of selected rehearsal frame duration for directors of high-performing bands which includes giving directives, information, positive and negative feedback, asking questions, and addressing off-task student behaviors. Directors A-E demonstrated 1,826 incidences of teacher talk during 176 selected rehearsal frames, with a mean duration per verbalization of 4.28 seconds at a rate of 5.44 episodes per minute. Table 10 shows the target category of unidentified had the largest percentage of teacher talk time at 63.01%, followed by tempo at 45.57%. The target category other utilized the least teacher talk time with 29.76%.

Table 10

Time Proportions Devoted to Teacher Behaviors (talk, modeling, questions, addressing off task behavior) and to Student Behaviors (full ensemble performance, section performance, individual performance) Per Rehearsal Target Category For Directors of High-Performing Bands.

Target	Teacher Talk	Teacher Modeling	Student Performance Full Ensemble	Student Performance Section	Student Performance Individual
Articulation	35.78	13.26	8.33	30.93	1.71
Dynamics	36.86	10.79	35.62	7.12	2.31
Rhythm	33.80	14.09	12.12	20.43	2.94
Pitch Accuracy	35.95	7.52	—	55.07	1.31
Other	29.76	8.33	61.90	—	—
Tone/Intonation	43.08	4.29	4.14	12.66	25.93
Unidentified	63.01	—	36.99	—	—
Mult. Targets (2)	41.67	6.63	22.41	24.12	1.61
Mult. Targets (3)	31.57	12.71	52.00	—	—
Mult. Targets (4)	—	—	—	—	—

Table 10 (continued)

Technique	36.68	8.70	—	—	56.25
Tempo	45.57	2.28	38.16	9.57	—

Note: (—) indicates that behaviors were not observed in the corresponding category.

Teacher talk accounted for 51.42% of selected rehearsal frame duration of rehearsals of Directors L-P. Table 11 shows that during 178 selected rehearsal frames with 746 student performance trials, directors of low-performing bands demonstrated 1,739 incidences of teacher talk for a mean duration of 5.42 seconds at a rate per minute of 5.66. The target receiving the largest percentage of teacher talk time during selected rehearsal frame duration was multiple targets (4), at 80.84%, followed by multiple targets (3) at 54.09%. Rhythm had the smallest average of frame duration utilizing teacher talk at 46.81%.

Table 11

Time Proportions Devoted to Teacher Behaviors (talk, modeling, questions, addressing off task behavior) and to Student Behaviors (full ensemble performance, section performance, individual performance) Per Rehearsal Target Categories For Directors of Low-Performing Bands.

Target	Teacher Talk	Teacher Modeling	Student Performance Full Ensemble	Student Performance Section	Student Performance Individual
Articulation	50.41	2.23	34.32	6.24	1.32
Dynamics	51.50	2.87	38.41	1.88	—
Rhythm	46.81	5.28	37.34	3.20	0.86
Pitch Accuracy	51.51	0.83	7.13	4.53	35.21
Other	50.35	3.22	7.04	35.38	1.81
Tone/Intonation	52.08	1.34	5.32	1.24	39.15

Table 11 (continued)

Unidentified	50.18	3.73	30.46	6.53	3.27
Mult. Targets (2)	52.92	—	33.71	10.86	1.48
Mult. Targets (3)	54.09	—	1.84	41.33	1.70
Mult. Targets (4)	80.84	—	10.18	8.98	—
Technique	51.37	4.66	—	13.70	26.99
Tempo	51.34	—	44.14	—	2.62

Note: (—) indicates that behaviors were not observed in the corresponding category.

TEACHER BEHAVIORS FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS: TEACHER TALK-DIRECTIVES & INFORMATION

For directors A-E, the percentage of time dedicated to giving directives reveals the largest of all teacher talk categories, accounting for 24.17% of selected rehearsal frame duration and 62.26% of total teacher talk time. For Directors L-P, directives represents the most time dedicated to teacher talk with 34.03% of all selected rehearsal frame time, representing more than half of teacher talk time with a mean proportion of 66.59%. Directors of low-performing bands gave directives at a mean rate of 2.65 per minute with a mean duration of 7.70 seconds compared to directors of high-performing bands who demonstrated a mean rate of 2.23 per minute for a mean duration of 6.49 seconds.

Teacher talk for all targets included time dedicated to giving specific information for the improvement or further understanding of specific targets addressed within the rehearsal.

Directors of high-performing bands demonstrated an average of 3.93% of selected rehearsal frame duration dedicated to giving information at a mean rate of once every 1.6 minutes (rpm

.63) with a mean duration of 3.71 seconds. Directors of low-performing bands gave information pertaining to each rehearsal target at a rate of once every 12.5 per minutes (rpm .08) for an average duration of 8.62 seconds (1.16% mean proportion of class time).

TEACHER BEHAVIORS
OF DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS:
TEACHER TALK-FEEDBACK

Directors of high-performing bands demonstrated 777 incidences of teacher feedback over 176 selected rehearsal frames and 1,257 student performance trials, averaging 4.39 per frame and one feedback episode every 1.6 student performance trials, accounting for 9.30% of selected rehearsal frame time. Negative feedback outnumbered positive feedback with 483 occurrences versus 294 for 5.67% of selected rehearsal frame time. For each rehearsal target, directors of high-performing bands averaged 1.66 incidences of positive feedback per frame and 2.73 for negative feedback. Feedback accounted for 3.63% of selected rehearsal frame duration. Directors A, B, C, and D demonstrated similar ratios of negative feedback to positive feedback with a mean ratio of 1.57:1. Director E demonstrated a ratio of 2.18:1. Table 12 shows feedback statistics vary per target category.

Table 12

Target Time Proportion and Frequency, Rate Per Minute, and Mean Duration of Positive and Negative Teacher Feedback During Rehearsal Targets for Directors of High-Performing Bands.

Target	Positive Feedback	Positive Feedback per min.	Positive Feedback Mean duration	Negative Feedback	Negative Feedback per min.	Negative Feedback Mean duration
Articulation	46 3.06%	.67	2.76	84 2.41%	1.22	2.1

Table 12 (continued)

Dynamics	26 3.84%	77	3.00	37 4.35%	1.10	2.41
Rhythm	43 2.19%	.69	1.91	93 4.57%	1.50	1.83
Pitch Accuracy	7 3.43%	1.14	1.86	13 7.52%	2.12	2.15
Other	6 5.48%	1.43	2.17	4 3.10%	.95	2.00
Tone/ Intonation	95 5.41%	1.19	2.73	146 8.50%	1.83	2.79
Unidentified	3 15.07%	4.11	2.00	2 6.85%	2.74	1.50
Multiple Targets (2)	18 2.59%	.55	2.50	29 3.50%	.88	2.17
Multiple Targets (3)	7 2.86%	.71	2.40	9 6.29%	1.00	3.17
Multiple Targets (4)	—	—	—	—	—	—
Technique	4 2.99%	1.09	5.50	7 5.16%	1.90	5.17
Tempo	39 3.79%	1.07	2.13	59 6.64%	1.62	2.46

Note. (—) indicates that behaviors were not observed in the corresponding category.

Feedback given by directors of low-performing bands represented 11.46% of total selected rehearsal frame time. The mean duration of feedback statements was 4.52 seconds. During 178 selected rehearsal frames and 746 student performance trials, 804 incidences of feedback were observed, with 378 identified as positive feedback and 426 as negative feedback. Time dedicated to positive feedback averaged 5.11% of selected rehearsal frame duration with

6.35% dedicated to negative feedback. Table 13 shows that feedback statistics vary per target category.

Table 13

Target Time Proportion and Frequency, Rate Per Minute, and Mean Duration of Positive and Negative Teacher Feedback During Rehearsal Targets for Directors of Low-Performing Bands.

Target	Positive Feedback <i>f</i> and %	Positive Feedback rate per min.	Positive Feedback Mean duration	Negative Feedback <i>f</i> and %	Negative Feedback rate per min.	Negative Feedback Mean duration
Articulation	81 6.83%	1.53	2.68	83 6.52%	1.57	2.49
Dynamics	16 2.76%	.57	2.88	16 4.64%	.57	4.94
Rhythm	74 5.62%	1.45	2.32	100 6.79%	1.96	2.0
Pitch Accuracy	44 4.84%	1.11	2.64	54 6.90%	1.36	3.06
Other	8 3.12%	.80	2.38	5 1.61%	.50	2.0
Tone/ Intonation	103 3.32%	1.91	1.89	115 6.60%	2.13	1.86
Unidentified	6 4.43%	.70	3.83	5 3.97%	.58	4.20
Multiple Targets (2)	8 4.53%	.66	4.13	13 10.95%	1.07	6.15
Multiple Targets (3)	14 2.65%	.52	3.07	19 5.97%	.70	5.11
Multiple Targets (4)	3 10.78%	1.80	3.67	4 32.93%	2.40	8.25
Technique	11 6.16%	1.51	2.45	3 1.92%	.41	2.67
Tempo	10 4.45%	.65	4.10	9 5.44%	.59	5.44

TEACHER BEHAVIORS
FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS:
TEACHER TALK-QUESTIONS

Directors of high-performing bands dedicated 1.45% of selected rehearsal frame duration to asking questions. Over the course of the 176 selected rehearsal frames, directors of high-performing bands asked 86 questions, averaging 1.8 questions per frame. The mean duration of each question was 3.43 seconds and occurred at a rate of once every 3.8 minutes (rpm 0.26). Most questions were asked while addressing tone/intonation (32), also representing the largest mean proportion of time at 1.99%. No questions were asked while rehearsing targets of pitch, other, unidentified, multiple targets (4), or technique.

During 307.23 minutes of selected rehearsal frames, the five directors of low-performing bands asked their students a total of 25 questions (61 questions fewer than Directors A-E), representing 1.03% of selected rehearsal frame time. Of the 25 questions, 15 pertained to the specific target being addressed while 10 questions were related to classroom behavior. The target utilizing the most questions was articulation and rhythm with six questions each. No questions were asked during other or multiple targets (4) selected rehearsal frames.

TEACHER BEHAVIORS
FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS:
OFF-TASK STUDENT BEHAVIOR

Teacher talk time devoted to addressing off-task behavior was recorded in the rehearsals of directors of high-performing bands 10 times during 335.58 minutes of selected rehearsal frame duration, representing .14% of rehearsal time. Director A had no incidences, while

Directors B and E had three each, Directors C and D, two each. The mean duration of verbalizations addressing off-task behavior by directors of high-performing bands for all targets was 2.9 seconds. The mean frequency for each teacher verbalization addressing off-task behavior occurred at a rate of once every 33 minutes.

During rehearsal frames of directors of low-performing bands, 67 occurrences of teacher talk dedicated to student off-task behaviors were observed, 57 more occurrences than directors of high-performing bands, representing a mean proportion of 3.74% of rehearsal time. Directors of low-performing bands addressed off-task behaviors at a rate of once every 4.5 minutes with an average duration time of 10.30 seconds per incidence. Directors L and O had the most incidences with 17 and 16 respectively. Director M had the fewest with 9.

TEACHER BEHAVIORS FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS: MODELING

Directors of high-performing bands used some form of teacher modeling for all target types addressed during selected rehearsal frames. During the 176 selected rehearsal frames, 408 incidences of teacher modeling were observed. Positive modeling outnumbered negative modeling by more than four times: 329 versus 79. The number of occurrences of positive modeling was similar for each director, averaging 65.8 incidences over all rehearsal frames with a standard deviation of 4.0. The number of negative modeling incidences was less similar between the directors of high-performing bands, with Directors A, B, C, D and E demonstrating occurrences as follows: 43, 5, 15, 8, and 8 respectively. The mean proportion of modeling for directors of high-performing bands was 8.93% of selected rehearsal frame time, with positive

modeling accounting for a mean proportion of 7.27% and negative modeling accounting for 1.66%. Table 14 shows the target category with the largest amount of frame duration dedicated to modeling was rhythm at 14.09%, followed by articulation at 13.26%, multiple targets (3) at 12.71%, and dynamics at 10.79%. Of all target categories, only rehearsal frames with unidentified targets included no form of modeling. Among all five directors, rhythm rehearsal had the most occurrences with 143, followed by articulation with 111. Directors A, B, C, and E used modeling most during rhythm rehearsal while Director B utilized modeling most often during articulation rehearsal.

Table 14

Rehearsal Time Proportion and Frequency, Rate Per Minute, and Mean Duration of Positive and Negative Teacher Modeling During Rehearsal Targets for Directors of High-Performing Bands.

Target	Positive Modeling <i>f</i> and %	Positive Modeling rate per min.	Positive Modeling Mean duration	Negative Modeling <i>f</i> and %	Negative Modeling rate per min.	Negative Modeling Mean duration
Articulation	86 10.82%	1.25	5.21	25 2.42%	.36	4.0
Dynamics	24 9.16%	.71	7.75	6 1.63%	.18	5.50
Rhythm	119 11.10%	1.92	3.47	24 2.98%	.39	4.63
Pitch Accuracy	7 5.71%	1.14	3.0	1 1.96%	.16	7.0
Other	7 8.33%	1.67	3.0	—	—	—
Tone/ Intonation	45 3.32%	.56	3.56	12 .96%	.15	3.83
Unidentified	—	—	—	—	—	—

Table 14 (continued)

Multiple Targets (2)	17 5.5%	.52	6.41	7 1.13%	.21	3.14
Multiple Targets (3)	17 11.86%	2.0	3.57	2 1.0%	.29	2.0
Multiple Targets (4)	—	—	—	—	—	—
Technique	5 8.70%	1.36	.32	—	—	—
Tempo	5 1.81%	.14	7.80	2 .47%	.05	5.0

Note. (—) indicates that behaviors were not observed in the corresponding category.

Directors of low-performing bands exhibited 75 instances of teacher modeling during 178 selected rehearsal frames across all rehearsals. Positive modeling occurred more often than negative modeling with 42 versus 33 incidences, indicating a ratio of 1.27:1. The mean proportion of selected rehearsal frame duration for directors of low-performing bands for modeling was 2.18%. Positive modeling was recorded at 1.31% of frame duration and negative modeling at 0.87%. Table 15 shows the target category other received the highest mean duration for modeling with 3.83%, followed by rhythm and dynamics at 2.21%, and technique at 2.06%. For directors of low-performing bands, the target of rhythm received the highest frequency of modeling with 33 occurrences. Among Directors L-P, all five except Director L exhibited the most modeling during rhythm rehearsal. No modeling occurred for directors of low-performing bands during targets of multiple targets (2), multiple targets (3), multiple targets (4), and tempo.

Table 15

Rehearsal Time Proportion and Frequency, Rate Per Minute, and Mean Duration of Positive and Negative Teacher Modeling During Rehearsal Targets for Directors of Low-Performing Bands.

Target	Positive Modeling <i>f</i> and %	Positive Modeling rate per min.	Positive Modeling Mean duration	Negative Modeling <i>f</i> and %	Negative Modeling rate per min.	Negative Modeling Mean duration
Articulation	6 1.21%	.11	6.33	4 1.04%	.08	8.25
Dynamics	5 1.81%	.18	6.0	3 1.06%	.11	6.00
Rhythm	21 3.38%	.41	4.85	21 1.90%	.24	4.83
Pitch Accuracy	—	—	—	6 .83%	.15	3.33
Other	2 3.22%	.20	12.0	—	—	—
Tone/ Intonation	4 .56%	.07	4.50	6 .76%	.11	4.17
Unidentified	1 3.73%	.12	19.00	—	—	—
Multiple Targets (2)	—	—	—	—	—	—
Multiple Targets (3)	—	—	—	—	—	—
Multiple Targets (4)	—	—	—	—	—	—
Technique	3 3.15%	.41	4.67	2 1.23%	.27	3.0
Tempo	—	—	—	—	—	—

Note. (—) indicates that behaviors were not observed in the corresponding category.

STUDENT BEHAVIORS FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS

Student behaviors were classified into six specific category types: full ensemble performance, section performance, individual performance, performance approximations, student talk, and marking music. Frequency, rate per minute, and duration amounts were recorded for each director and specifically for each rehearsal target type.

Table 8 (page 75) indicates directors of high-performing bands demonstrated 1513 incidences of student behaviors, accounting for 53.23% of the total selected rehearsal frame time. Student performance (full ensemble, section, or individual) represented 43.17% of all selected rehearsal frame time and 81.10% of student behavior time.

Table 9 (page 76) indicates directors of low-performing dedicated 46.64% of selected rehearsal frames to 795 incidences of student behavior, 6.59% less time than Directors A-E. Similar to directors of high-performing bands (recording 43.17%), a mean proportion of 43.61% of selected rehearsal frame time was devoted to student performance time (full ensemble, section, or individual), which represents 93.81% of all student behavior time.

STUDENT BEHAVIORS FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS: FULL ENSEMBLE PERFORMANCE

Among Directors A-E, targets that used full ensemble performance time represented a mean proportion of 16.81% of selected rehearsal frame time, at a rate of once every 1.32 minutes (rpm .76) with a mean duration of 13.20 seconds. Full ensemble performance accounted for the second largest proportion of student performance time (38.89%), following section performance

(42.34%). During 176 selected rehearsal frames, 256 incidences of full ensemble performance were observed. Table 16 indicates the target category other contained the largest average of full ensemble time dedicated to a single target at 61.90%, followed by multiple targets (3) at 52.00%, tempo at 38.16%, unidentified at 36.99%, and dynamics at 35.62%. Tone/intonation contained the lowest average amount of time at 4.14%. The target category rhythm had the highest frequency for full ensemble performance occurrences with 64, followed by tempo with 47.

Table 16

Student Behaviors Represented in Duration Proportion of Selected Rehearsal Frames by Directors of High-Performing Bands.

Target	Full-Ens. Perf.	Section Perf.	Indiv. Perf.	Perf. Approx.	Student Talk	Marking Music
Articulation	8.33	30.93	1.71	5.59	1.45	2.96
Dynamics	35.62	7.12	2.31	0.50	1.63	4.46
Rhythm	12.12	20.43	2.94	11.96	2.23	2.40
Pitch Accuracy	0.00	55.07	1.31	0.00	0.00	0.00
Other	61.90	0.00	0.00	0.00	0.00	0.00
Tone/Intonation	4.14	12.66	25.93	5.38	1.41	3.08
Unidentified	36.99	0.00	0.00	0.00	0.00	0.00
Mult. Targets (2)	22.41	24.12	1.61	0.00	1.64	1.86
Mult. Targets (3)	52.00	0.00	0.00	0.00	0.43	4.00
Mult. Targets (4)	0.00	0.00	0.00	0.00	0.00	0.00
Technique	0.00	0.00	56.25	0.00	0.00	0.00
Tempo	38.16	9.57	0.00	2.25	0.77	1.51

The mean frequency of full ensemble performance for directors of high-performing bands was 51.40, with Director D demonstrating the most with 63 and Director B the least with 44. Full ensemble performance was not recorded during selected rehearsal frames of targets of pitch accuracy, multiple targets (4), and technique.

Directors L-P utilized full ensemble performance the most of the three categories of student performance with 51.08% of student performance time at a rate of 1.08 per minute for a mean duration of 12.43 seconds. During 178 selected rehearsal frames, 331 occurrences were recorded with the target of rhythm representing the highest frequency with 115 occurrences, followed by articulation with 82. Table 17 indicates the largest mean proportion of frame duration using full ensemble performance for one target was tempo at 44.14%, followed by dynamics at 38.41%, rhythm at 37.44%, and articulation 34.32%. The only target receiving no full ensemble performance time was technique. All five directors utilized similar incidences of full band ensemble time with a mean frequency of 64.60 with standard deviation of 8.50.

Table 17

Student Behaviors Represented in Duration Proportion of Selected Rehearsal Frames Target Categories by Directors of Low-Performing Bands.

Target	Full-Ens. Perf.	Section Perf.	Indiv. Perf.	Perf. Approx.	Student Talk	Marking Music
Articulation	34.32	6.24	1.32	0.81	2.15	1.24
Dynamics	38.41	1.88	0.00	0.00	2.65	2.69
Rhythm	37.44	3.20	0.86	2.02	2.30	2.10
Pitch Accuracy	7.13	4.53	35.21	0.00	0.68	0.00
Other	7.04	35.38	1.81	0.00	1.31	0.80
Tone/Intonation	5.32	1.24	39.15	0.50	0.19	0.22

Table 17 (continued)

Unidentified	30.46	6.53	3.27	0.00	2.57	0.00
Mult. Targets (2)	33.17	10.86	1.48	0.00	1.56	0.00
Mult. Targets (3)	1.84	41.33	1.70	0.00	1.22	0.00
Mult. Targets (4)	10.18	8.98	0.00	0.00	0.00	0.00
Technique	0.00	13.70	26.99	0.00	1.78	1.37
Tempo	44.14	0.00	2.62	0.00	0.79	1.57

STUDENT BEHAVIORS
FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS:
SECTION PERFORMANCE

When rehearsing specific sections of instruments within the band, directors of high-performing bands utilized a mean proportion of 18.26% of selected rehearsal frames at a rate of 1.32 per minute with an average duration of 8.32 seconds. Section performance occurred 442 times during the 176 selected rehearsal frames, representing the largest proportion of the three categories of student performance time with 42.34%. As shown in Table 16, rehearsal of pitch accuracy had the highest mean proportion of section performance within selected frame duration with 55.07%, followed by articulation 30.93%, and multiple targets (2) at 22.41%. The target of tone/intonation received the most instances of section performance with 144 (12.66% of section performance time, with a mean duration of 4.22). Target categories other, unidentified, multiple targets (3), multiple targets (4), and technique had no incidences of section performance.

Of the three student performance categories, directors of low-performing bands devoted the least proportion of time to section performance with 19.33% (8.37% of selected rehearsal

frame time). Directors L-P included student performance incidences at a rate of .35 per minute for an average duration of 14.21 seconds. During 178 selected rehearsal frames, 108 occurrences of section performance were used in addressing all target types except tempo. Table 17 indicates the largest proportion of section performance within selected rehearsal frames was dedicated to multiple targets (3) at 41.33% and other at 35.38%. The least mean proportion of time dedicated to section performance for one target by Directors L-P was devoted to tone/intonation at 1.24%, with seven incidences. For all five directors, the target of articulation received the highest frequency of section performance with 27 occurrences followed by multiple targets (3) with 18.

STUDENT BEHAVIORS FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS: INDIVIDUAL PERFORMANCE

In the categories of student performance behaviors for Directors A-E, individual performance time had the second highest frequency, following section performance (442) and outnumbering full ensemble performance (256), with 352 occurrences across 176 selected rehearsal frames. The mean proportion of time dedicated to individual performance by directors of high-performing bands was 8.10% (18.77% of student performance time), with an average rate of 1.05 per minute for a mean duration of 4.63 seconds. Table 16 indicates that technique frames had the highest percent of frame duration dedicated to individual performance with 56.25% (though this proportion was the result of only 10 episodes over 2.07 minutes), followed by tone/intonation with 25.93%. Pitch rehearsal represented the lowest proportion of time with 1.31%. The target with the highest frequency count was tone/intonation with 285 occurrences representing 80.97% of the 352 total numbers of incidences. All five directors of high-performing bands demonstrated the highest frequency of individual performance in the target

category of tone/intonation. No individual performance occurred in selected rehearsal frames targeting other, unidentified, multiple targets (3), multiple targets (4), and tempo.

Among Directors L-P, individual performance incidences outnumbered section performance with 281 occurrences versus 108, 42 fewer incidences than full ensemble performance, representing 29.59% of student performance time. The mean proportion of selected rehearsal frame duration spent by directors of low-performing bands on individual performance was 12.92% and occurred at a rate of .91 per minute. A mean duration of 8.48 seconds was nearly twice that of Directors A-E (4.63 seconds). Table 17 reveals that the highest mean proportion of individual student performance time was dedicated to tone/intonation with 39.50%, followed closely by pitch accuracy at 35.21%, and technique at 26.99%. No individual student performance trials were observed for categories of dynamics or multiple targets (4).

STUDENT BEHAVIORS FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS: PERFORMANCE APPROXIMATIONS

During 176 selected rehearsal frames, 207 performance approximations were observed with the target category rhythm receiving the highest frequency with 90 occurrences and 11.96% of selected rehearsal frame time. Dynamics received the smallest mean proportion of frame duration using approximations for 0.50%. Director C demonstrated the highest frequency amount with 47 occurrences with Director A demonstrating the fewest with 35. Directors A-E utilized approximations during rehearsal for targets of articulation, rhythm, dynamics, tone/intonation, and tempo. Rehearsal targets of pitch, other, unidentified, multiple targets (2), multiple targets (3), multiple targets (4), and technique did not utilize performance approximations.

Directors of low-performing bands included 14 occurrences of performance approximations over 178 selected rehearsal frames. The highest proportion mean for one target was recorded for rhythm at 0.34%. Director L recorded zero incidences of performance approximations. Director P recorded the most of all five directors of low-performing bands with eight occurrences over three days. Of the twelve categories of frame targets, approximations were utilized only for the targets of rhythm and articulation.

STUDENT BEHAVIORS FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS: STUDENT TALK

The mean proportion of student talking within selected rehearsal frames of directors of high-performing bands was 1.46% at a rate of once every 3.2 minutes (.31 rpm) for a mean duration of 2.87 seconds. Student talk was observed in 103 instances over 176 target frames. For Directors A-E, no instances occurred for the targets of pitch, other, unidentified, multiple targets (4), and technique.

Rates per minute for student behaviors categorized as talk time were recorded for directors of low-performing bands at a rate of once every 7.7 minutes (.13 rpm) with a mean duration of 6.85 seconds for a mean proportion of class time of 1.48%. During 178 selected rehearsal frames, 40 occurrences of student talk were observed, representing student responses to teacher questions and off-task student behavior.

STUDENT BEHAVIORS FOR DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS: MARKING MUSIC

Directors of high-performing bands dedicated a mean time proportion of 2.67% of selected rehearsal frame duration marking music at a rate of once every 2.2 minutes (.46 rpm) for a mean duration of 3.52 seconds. During 176 frames, 153 incidences of students marking music occurred. Tone/intonation received the highest frequency of music marking with 55 occurrences by directors of high-performing bands. Marking music was not recorded for targets of pitch accuracy, other, unidentified, multiple targets (4), or technique.

During 178 selected rehearsal frames representing 307.23 minutes of rehearsal time, directors of low-performing bands utilized 21 episodes of music marking as part of student behaviors. These episodes accounted for .99% of rehearsal time. The rate was demonstrated as once every 14.28 minutes with a mean duration of 8.67 seconds. Targets of multiple targets (2), multiple targets (3), multiple targets (4), pitch, and unidentified received no time dedicated to marking music.

COMPARATIVE ANALYSIS OF MATCHED PAIRS OF DIRECTORS: DIRECTORS A & L

A comparison of behaviors for matched Directors A and L, the oldest and most experienced teachers from each of the two participant categories, shows that Director A spent 52.47% of class time in repertoire rehearsal, the largest percentage of any of the ten participants, while Director L spent 48.84%, the second highest percentage of all ten participants. The most prominent differences between the two directors were in regards to time dedicated to sight-reading, Director A using 11.02% and Director L using 0.0%. Director A represented one of the lowest percentages of time dedicated to non-instructional time at 11.65%, while Director L used more than double that amount at 25.63%.

Both Directors A and L spent the majority of selected rehearsal frame duration on their 2 most addressed targets, 50.55% and 52.59% respectively.

Though rehearsal time dedicated to selected rehearsal frames was only approximately 2 minutes longer for Director A than Director L (70.53 minutes versus 68.53), 416 episodes of teacher talk were recorded versus 251 for Director L (165 fewer incidences). However, it is important to note that Director L spent 11.58 more minutes in verbalizations, demonstrating a mean duration of 8.66 per episode versus 3.56 for Director A. Director A talked more frequently with a rate per minute of 5.90 compared to 3.66 for Director L.

When giving feedback during selected rehearsal frames, Director A exhibited 155 incidences compared to Director L's 64. Both gave more negative feedback than positive, with 95 versus 60 for Director A and 37 versus 27 for Director L. Director A spent between 1 and 2 seconds for each incidence of positive or negative feedback which was much different for Director L, averaging 3.04 seconds for positive feedback verbalizations and 7.43 for negative feedback verbalizations.

Director L asked two questions of his students over the course of three days of rehearsal demonstrating a mean duration of 10 seconds per question, while Director A asked 18 accounting for 1.15% of repertoire rehearsal time with a mean duration of 2.72 seconds.

Director A was not observed addressing off-task behavior. Director L demonstrated 17 occurrences of addressing off-task student behavior for 5.79% of selected rehearsal frames, with a mean duration of 14 seconds.

Director A demonstrated 112 episodes of modeling with 69 identified as positive modeling and 43 as negative modeling, a ratio of 1.6:1. Director L demonstrated much fewer

cases of teacher modeling with 11 occurrences over three days. For Director L, negative modeling outnumbered positive modeling with eight incidences versus three (ratio 2.6:1).

Student behaviors categorized as performance (full ensemble, section, individual) accounted for 44.01% of selected rehearsal frame duration for Director A over three days of rehearsal. Director L demonstrated a similar percentage with 45.58%. Between the two directors, both using just over 31 minutes for student performance, Director A demonstrated 100 more episodes of student performance with 238 occurrences versus 138 for Director L.

Director A utilized performance approximations (clapping, singing, etc.) 35 times over three days, accounting for 6.73% of selected rehearsal frame time. Most occurrences were demonstrated while rehearsing rhythm (21). Director L did not use performance approximations on any of the three days of rehearsal.

Time dedicated to marking music was not present in the three rehearsals of Director L. Director A demonstrated 20 incidences for 51 total seconds of rehearsal time, with a mean duration of 2.55 seconds.

COMPARATIVE ANALYSIS FOR MATCHED PAIRS OF DIRECTORS DIRECTORS B & M

Data for matched Directors B and M revealed that Director B devoted 45.05 % of class time to repertoire rehearsal and Director M devoted 47.76%. Director B used nearly twice as much time in skill development/warm-up as did Director M: 11.40% versus 5.38%. Director B had his students sight-read during one of the three class periods, for a total of six minutes (3.77% of class time). Director M did not sight-read with his ensemble. Director B spent 18.27% of class

time in non-instructional minutes, the most of any director of high-performing bands, while Director M spent the second largest percentage of time of all ten participants at 31.44%.

Matched Directors B and M differed for time devoted to repertoire selected rehearsal frames, 40.36% of total class time for Director B versus 33.59% for Director M, a difference of 6.77%.

Director M devoted more time to giving feedback than did Director B, showing 220 incidences totaling 8.35 minutes (15.06% of selected rehearsal frame time). Director B demonstrated 159 occurrences totaling 5.44 minutes (8.48% of selected rehearsal frame time). Both directors demonstrated more occurrences of negative than positive feedback demonstrating approximately the same ratio of negative to positive feedback, 1.41:1.

Director B spent a total of 1 minute 5 seconds asking 19 questions over three days of rehearsal. Questions were short, averaging 3.47 seconds per episode. Director M asked fewer questions, demonstrating three for a total of 20 seconds of rehearsal, averaging 6.67 seconds per question.

Director M spent more time addressing off-task student behavior with nine incidences for 3.86% of selected rehearsal frame duration at a rate of once every 6.25 minutes (rpm .16) with a mean duration of 14.33 seconds. Director B demonstrated fewer occurrences of addressing off-task student behavior, recording only three over three days of rehearsal.

Director M demonstrated 62 fewer incidences of modeling, with nine episodes for 1.71% of selected rehearsal frame duration over the three days. Director B demonstrated 71 occurrences with 7.42% of rehearsal time. Both directors used positive modeling more often than negative modeling.

Student behaviors categorized as performance (full ensemble, section, individual) accounted for 37.48% of rehearsal frame duration for Director B over three days of rehearsal. Director M revealed a larger time proportion with 45.39%. Director B demonstrated 58 more occurrences of student performance with 186 versus 128 for Director M.

Director B used performance approximations (clapping, singing, etc.) 38 times over three days, accounting for 3.38% of rehearsal time, each episode being brief with a mean duration of 3.42 seconds. Most occurrences were demonstrated while rehearsing rhythm (20). Director M used performance approximations 35 incidences fewer than Director B, demonstrating only three occurrences, twice for articulation and once for rhythm.

Time dedicated to marking music was present two times in rehearsals of Director M and 32 times for Director B. During rehearsals for Director M, both occurrences of marking music overlapped with other behavior categories.

COMPARATIVE ANALYSIS FOR MATCHED PAIRS OF DIRECTORS DIRECTORS C & N

Matched Directors C and N spent a similar amount of time devoted to repertoire rehearsal, 47.86%, and 47.52%. Comparable to most directors of high-performing band participants, Director C spent nearly twice as much time dedicated to skill development/warm-up as did his counterpart from the low-performing category (8.91% versus 4.62%). Director C sight-read each day for an average of 8 minutes 44 seconds per class period (14.57% of 180 minutes of total class time, the most of all ten directors). Director N did not sight-read on any of the three days. Director N spent close to three times more minutes in non-instructional time than did Director C: 29.93% versus 11.87%.

Matched Directors C and N spent respectively 40.39% and 37.09% in selected rehearsal frame time. Within 38 selected rehearsal frames, Director C utilized 126 student performance trials, averaging one trial every 29 seconds. Within 42 selected rehearsal frames, Director N utilized 103 student performance trials, averaging one student performance trial every 39 seconds, which suggests a slower rehearsal pace than Director C.

Directors C and N showed a similar number of episodes of teacher talk, with 382 for Director C and 360 for Director N, with Director N spending just over 10% more time in the category of teacher talk than Director C with 51.39% versus 40.17%. The mean duration for Director N was longer with 5.70 seconds compared to 4.58 for Director C.

During 72.70 minutes of rehearsal selected for further analysis, Director C demonstrated 163 incidences of feedback, showing more episodes of negative feedback than positive with 103 occurrences versus 60, a ratio of 1.72:1. Director N demonstrated 172 occurrences of feedback. Different from Director C, and the other nine participating directors, Director N demonstrated more positive incidences of feedback than negative, with 108 versus 64, a ratio of 1.69:1.

Questions asked by Director C over the three days numbered 24, nearly 5 times the number demonstrated by Director N with 5 over the three days. Director C asked questions at a shorter mean length than Director N with a mean duration of 3.38 seconds compared to 8.60 seconds per question for Director N.

Director N spent a larger percentage of rehearsal time addressing off-task student behavior (3.50%), showing 13 occurrences with a mean duration of 10.85 seconds per episode. Director C demonstrated only two occurrences with a mean duration of 2.5 seconds.

Director C dedicated 8.47% of rehearsal time to both positive and negative modeling, more than Director N who demonstrated 2.67% of selected rehearsal frame time. Director C

demonstrated a positive modeling to negative modeling ratio of 4.47:1. Director N used more negative than positive modeling with 10 versus 8 incidences (ratio, 1.25:1).

Student performance (full ensemble, section, individual) accounted for 41.72% of selected rehearsal frame duration for Director C over the three days of rehearsal. Director N demonstrated a similar amount with 43.28%. Director C utilized 119 more episodes of student performance with 267 occurrences totaling 30.33 minutes of rehearsal time versus 148 for Director N totaling 28.90 minutes.

Director C used performance approximations (clapping, singing, etc.) 47 times over three days, accounting for 4.54% of selected rehearsal frame duration showing a mean duration of 4.21 seconds. Most occurrences were demonstrated while rehearsing tone/intonation. Director N used performance approximations 2 times during the three days of rehearsal showing a mean duration of 10.5 seconds per episode, each time for rhythm.

Time dedicated to marking music was present in the three rehearsals of both directors. Director C devoted 44 incidences for 2.68 minutes of rehearsal time, with a mean duration of 2.68 seconds. Director N demonstrated three incidences with a mean duration of 9.33 seconds, accounting for only .69% of rehearsal time.

COMPARATIVE ANALYSIS FOR MATCHED PAIRS OF DIRECTORS DIRECTORS D & O

A comparison of statistics for matched Directors D and O shows that Director D spent 46.23% of time in repertoire rehearsal, while Director O similarly spent 46.15%. The percentage of time dedicated to skill development/warm-up for Director D (11.25%) was nearly twice as much as for Director O (5.95%). Director D had his students sight-read during each rehearsal for

a total percentage time of 11.54%, while Director O did not have his students sight-read on any of the three days. Director D used 11.54% of class time for non-instructional behaviors. Director O devoted nearly three times the proportion of non-instructional time at 32.43% (48 minutes 38 seconds). This percentage for Director O represents the highest for any of the ten participants and nearly equals one full class period considering each for this director was 50 minutes.

Matched Directors D and O spent respectively 41.87% and 39.53% of class time in selected rehearsal frames. Director D averaged 1 minute 59 seconds per frame, while Director O averaged 1 minute 17 seconds, the shortest mean frame length average of all ten directors.

Director D spent 25.64 minutes, of 65.32 minutes of selected rehearsal frames, in the category of teacher talk. The total number of occurrences was similar to that of Director O with 356 episodes versus 347. Proportions of time spent talking were different for the two directors with D using 39.25% of selected rehearsal frame duration and Director O using 48.53%.

Director D had 175 incidences of feedback compared to Director O's 127. Both demonstrated more negative feedback than positive, demonstrating a ratio of 1.59:1 for Director D and 1.5:1 for Director O. Director D spent approximately the same amount of time with each feedback verbalization with a mean duration of 6.62 seconds. Director O averaged 2.88 seconds for positive feedback verbalizations and 3.0 for negative feedback verbalizations, approximately half of what were demonstrated by Director D.

Director D and O both asked 10 questions of their students over three days of rehearsal. Director O spoke nearly twice as long for each episode showing a mean duration of 6 seconds versus 3.11 for Director D.

Director D demonstrated seventy-six episodes of modeling with 66 identified as positive modeling and 8 as negative modeling, a ratio of 8.25:1. Director O demonstrated much fewer

episodes of teacher modeling with 24 occurrences over three days. Negative modeling outnumbered positive modeling demonstrated by a ratio of 1.18:1.

Directors D and O demonstrated 183 versus 171 incidences of student performance respectively. Director D devoted most time to full ensemble performance with 16.19 minutes, second most time to section performance with 9.62 minutes, and third most time to individual performance with 2.78 minutes. Director O also dedicated most rehearsal time to full ensemble performance at 13.51 minutes, but demonstrated individual performance second with 7.31 minutes, and sectional third with 4.10.

Performance approximations (clapping, singing, etc.) in rehearsals of Director D were observed 43 times over three days, accounting for 4.36% of selected rehearsal frame time. Most occurrences were demonstrated while rehearsing rhythm (18) and tone/intonation (18). Director O used performance approximations only once over the three days of rehearsal while addressing rhythm.

Director D devoted 32 incidences for marking music for 1.92 minutes of selected rehearsal frame time, with a mean duration of 3.59 seconds. Director O demonstrated time dedicated to marking music with six incidences accounting for 1.17 minutes of selected rehearsal frame duration for a mean duration of 11.76 seconds.

COMPARATIVE ANALYSIS FOR MATCHED PAIRS OF DIRECTORS DIRECTORS E & P

Directors E and P, the youngest and least experienced of the ten participants, dedicated similar amounts of time to each of the five categories of total class time allocation. The largest

difference between the two directors, though fairly minimal, was class time dedicated to selected rehearsal frames: Director E devoted 46.15%, and Director P, 41.99%. Skill development/warm-up time for Directors E and P were 19.74% and 19.99% respectively. Both directors had their students sight-read, with Director E's students sight-reading one of the three days for 8 minutes 59 seconds (5.99% of 150 minutes of total class time) and Director P sight-reading with his students two of the three days for an average of 5 minutes 50 seconds each day (7.78% of 150 minutes of total class time). Time spent in the non-instructional category for Director E was 10.56% and 14.33% for Director P.

Director E devoted 41.9% of class time to selected rehearsal frames while Director P devoted 38.10%. Director E averaged one selected rehearsal frame every 2 minutes 19 seconds. Director P averaged one frame every 2 minutes 7 seconds. Although ranked in a different order according to mean proportion of selected rehearsal frame time, both Directors dedicated the majority of their rehearsal frames to the same top five most addressed targets, with rhythm, articulation, and tone/intonation representing the three targets receiving the most frame rehearsal time, followed by tempo and multiple targets (2).

Although Directors E and P share more similar statistics for class time and rehearsal target use than the other matched pairs, statistics for teacher and student behaviors of Directors E and P show more distinct differences between the two of them. Incidences of teacher talk numbered 299 occurrences for Director E and 408 for Director P. Director P devoted more time to the category of teacher talk with 29.66 minutes (51.90% of selected rehearsal frame rehearsal time) compared to 25.08 minutes for Director E (39.90% of selected rehearsal frame rehearsal time).

Director E demonstrated a frequency of feedback of 121 episodes over 62.85 minutes of selected frame rehearsals with Director P demonstrating 95 more with 216 episodes over 57.15 minutes of selected rehearsal frame time. Both directors demonstrated average feedback durations of 2 to 3.5 seconds each. Director P dedicated 5.49% more of rehearsal to feedback than did Director E (13.49% versus 8.0%). Director E demonstrated a ratio of negative to positive feedback of 2.18:1. Director P demonstrated a smaller ratio of 1.27:1.

Director P had 12 episodes dedicated to addressing off-task student behavior, nine more than Director E. Director P used 1.49% of selected rehearsal frame duration in this category. Director E spent less than half of a percent. Both demonstrated a mean duration of 4.5 seconds per episode.

Both Directors E and P demonstrated more positive modeling than negative modeling, though Director E demonstrated more total modeling occurrences with 69, versus 13 for Director P. Director E demonstrated 61 positive modeling examples and 8 negative, a ratio of 7.26:1. Director P demonstrated 12 positive examples and only 1 negative, a ratio of 12:1.

Similar percentages of selected rehearsal frame duration dedicated to student performance were demonstrated by Directors E and P, with 41.21% for Director E and 41.52% for Director P. Director E demonstrated 176 episodes while Director P demonstrated 135. For Director E, time priority was given to full ensemble performance with 10.59 minutes, followed by section performance with 9.51 minutes, and finally individual performance with 5.80 minutes. Director P devoted most time to full ensemble performance with 15.48 minutes, followed by individual performance with 6.30 minutes, and section performance with 1.95 minutes. Directors E and P both demonstrated mean proportions of time with somewhat similar durations to full

ensemble performance (12.47 seconds versus 12.90), followed by section performance (9.51 seconds versus 9.67), and individual performance (5.52 seconds versus 7.41).

Director E used performance approximations (clapping, singing, etc.) 44 times over three days, accounting for 5.54% of selected rehearsal frame duration with a mean duration of 4.93 per occurrence. Director P used performance approximations eight times over the three days of rehearsal showing a mean duration of 6 seconds per episode for 1.40% of selected rehearsal frame time.

Student talk was recorded 26 times during three days of rehearsal for Director E. Rehearsal time of Director P contained 6 student talk episodes with a mean duration of 5.50 per episode.

For Director E, there were 25 incidences of student behavior in the category of marking music while Director P demonstrated 10 occurrences.

CONDUCTING EVALUATION ANALYSIS OF DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS

Five expert university wind conductors evaluated all ten directors' conducting using a score sheet that rewarded up to five points each for eight categories of conducting behaviors (Appendix C): beat pattern, conducting plane, right hand use, left hand use, gestures, confidence, facial use, and starts & stops. A score of 200 reported for a single director would indicate that all five evaluators awarded a score of 5 points in each category. Video that included segments of play-through performance was used for evaluation to allow for longer uninterrupted segments of each director's conducting than would be seen during most selected rehearsal frame excerpts.

This decision was also made to better represent conducting that would be more representative of what would be observed in performance.

Table 18 shows that directors of high-performing bands produced a mean score of 167.2 out of the 200 possible points.

Table 18

Conducting Evaluations for Directors of High-Performing Bands with Each Category Score Out of 25 Possible Points for Each Category.

Director:	Confidence	Beat Pattern	Right Hand	Left Hand	Plane Height	Starts & Stops	Gestures	Facial Use	Scores Total
A	23	25	21	15	24	22	15	14	159
B	24	22	24	19	22	23	22	17	173
C	24	22	23	23	24	23	24	22	185
D	24	20	20	19	23	24	21	20	171
E	19	19	19	17	20	19	18	17	148
A-E mean	114	108	107	103	113	111	100	90	836
Total means	22.8	21.6	21.4	20.6	22.6	22.2	20	18	167.2

Conducting Evaluations for Directors of Low-Performing Bands with Each Category Score Out of 25 Possible Points for Each Category.

Director:	Confidence	Beat Pattern	Right Hand	Left Hand	Plane Height	Starts & Stops	Gestures	Facial Use	Totals
L	20	20	17	17	16	17	19	19	145
M	14	14	19	13	12	14	14	9	109
N	18	18	21	12	17	16	17	10	129
O	24	19	19	19	18	20	19	20	158
P	18	20	19	19	21	18	17	15	147
L-P mean	94	91	95	80	84	85	86	73	688
Total means	18.8	18.2	19	16	16.8	17	18.2	14.6	137.6

Directors A-E scored highest in the category of confidence with a mean score of 22.8 out of 25. The lowest score was for facial use with a mean score of 18 points. Evaluator comments indicating areas for improvement focused most often on the directors' need to increase the use of musically reflective efforts, largely those of the left hand and face. Eighteen specific comments indicated corrective suggestions, six dealing with conducting plane height during soft or light passages, five dealing with wrist fluidity, and three dealing with right hand baton grip. The remaining four corrective suggestions indicated that two of the five directors spent too much time "mirroring", un-necessarily conducting beat patterns with both the right hand and left hand for extended periods of time.

Directors of low-performing bands produced a mean score of 137.6. Between Directors L-P, Director P scored second highest with 147 points followed by Director L with 145. Director M scored lowest with 109 points out of the possible 200. Directors L-P scored highest for right hand use with a mean score of 19 points. The lowest category score for Directors L-P was for facial use with a mean score of 14.6 out of 25 possible points. Evaluator comments indicating areas for improvement focused most often on the directors' need to increase the use of musically reflective efforts, largely those of the left hand and face. Specific comments indicating corrective suggestions were recorded for directors of low-performing bands numbering 49. Six comments dealt with conducting plane height during soft or light passages, six comments suggested directors should "get their head out of the score" more often, and four dealt with right hand baton grip. Eleven comments indicated issues with maintaining pulse and two suggested better eye contact to increase confidence and sincerity. Six comments suggested better wrist fluidity, and five advised for better baton tip *ictus* clarity. Two comments were made suggesting that the

directors alter their stance to allow for better manipulation of the torso and to aid their look of comfort. The remaining seven corrective suggestions indicated that three of the five directors spent too much time “mirroring”, un-necessarily conducting beat patterns with both the right hand and left hand for extended periods of time.

USE OF TEACHING MATERIALS INCLUDING SIGHT-READING PIECES & REPERTOIRE SELECTIONS OF DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS

As part of each band rehearsal, different materials were used during various parts of the total class time usage categories: repertoire rehearsal, play-through performance (music not explicitly receiving instruction), skill development/warm-up, and sight-reading. These materials included ensemble skill books, chorales, scale sheets, rhythm sheets, and concert band music.

All five directors of high-performing bands used published instrumental ensemble books as part of skill development/warm-up time. Directors A and C used the same skill books as one another, as did Directors B and E. Director D used a book that was similar to those used by the other directors that included key studies, chorales, rhythm and meter studies, and articulation and style studies. Scales were played in at least two of the three rehearsals of each director. All 12 major scales were played each day in the rehearsals of Directors A, C, and E (from memory in rehearsals of Directors A and C). Directors B and D used scale playing as part of skill development/warm-up each day, concentrating on keys related to the repertoire music and sight-reading selections.

Directors A, B, and E used the same chorale everyday near the end of skill development/warm-up time, a Bach chorale arranged for wind ensemble in B-flat major. Director

C used a different chorale each of the three days, two by Bach and one by Scheidt in the keys of E-flat major, F major, and D minor. Director D used the same Bach chorale two of the three days, arranged for wind ensemble in F major.

Additional materials were used in the rehearsals of Directors A, C, and E. Each director had selected, or written themselves, supplemental sheets that addressed certain compositional aspects represented in the sight-reading or concert repertoire. Directors A and E both used rhythm sheets that utilized a time signature of 6/8 as both had their respective ensembles sight-read a piece that was all or in part composed in 6/8 time. Directors C and E used an articulation sheet each day that focused on five common note length applications: slur, tenuto, accented, marcato, and staccato. Director B utilized a multiple tonguing sheet each day, reflective of brass requirements in the concert repertoire.

Directors A-E used eleven sight-reading pieces over the three days of rehearsal. Each piece was graded as a difficulty level of 3, 4, or 5. The selections collectively represented the key signatures of C major, F major, B-flat major, E-flat major, A-flat major, and D-flat major. The variety of time signatures included 2/4, 3/4, 4/4, 2/2, and 6/8. Procedures for sight-reading were somewhat different between Directors A-E. Directors A and C demonstrated similar methods which included a brief period where each director pointed out important compositional aspects of the piece to be sight-read, including key and time changes, as well as tempo markings/changes, stylistic indicators, and textures and phrases of *tutti* versus section or solo/*solli* based passages. Directors B, D, and E demonstrated a similar method of discussing the sight-reading selection to the students, but with less detail than Directors A and C. After each sight-reading student performance trial, each director of high-performing bands spent time discussing their respective band's efforts. Director A utilized a second student performance trial on one of the three days of

rehearsal. Feedback was given after the second student performance trial. Of the 11 pieces selected for sight-reading, five were marches and six were overture-like pieces that used an A-B-A form.

Each of the ten bands was to attend a district or state sponsored music festival where a required music list was used as a compulsory part of music selection for repertoire to be played at the festival/contest. As with all wind ensemble repertoire, when published or edited, each piece of music was rated based on its performance difficulty using a scale of 1-5 in most cases, and 1-6 in some instances, with a rating of 1 representing the least difficult selections and 5 or 6 representing the most difficult. Depending on school size, each band was required to play music selections that were determined to be on a difficulty level appropriate for each school band program. Each band played a march and two additional pieces. Marches are traditionally not given a difficulty rating.

Excluding the march selected by each director, Directors A-E selected ten pieces of music (two per school). The difficulty rating given to each piece by its publisher was used to report a number reflective of the difficulty ratings of concert repertoire for each band, and subsequently each group of band directors. For example, Director A programmed a selection having been determined as grade 5 music (difficulty level 5) and one piece graded as a level 6. These two ratings added together results in a difficulty rating of 11, the most difficult program for directors of high-performing bands. Directors C programmed a level of 10 and Director D programmed a difficulty level of 9. Director B, at a smaller school than Directors A and C, programmed a difficulty level of 6, and Director E at the smallest school, programmed a difficulty level of 7. The mean difficulty level for Directors A-E was 8.6.

For Directors of high-performing bands, of the ten pieces selected from each band's respective prescribed music list, each composition additionally appears on two or more other states' prescribed music lists, suggesting possible wider recognition of the compositions as worthy of being an important part of the instrumental ensemble curriculum (Appendix D). Each of the ten pieces also appears on at least three of the standard or "core" repertoire lists compiled by the leading expert conductors/educators in the field of instrumental music (Appendix E, F, G). Including the marches selected for performance, composers represented by the 15 selections of Directors A-E have an international level of recognition in all areas of music performance. These composers include Ralph Vaughn Williams, John Phillip Sousa, Karl King, Percy Grainger, Darius Milhaud, Norman Dello Joio, Morten Lauridsen, Camille Saint-Saëns, and Giuseppe Verdi.

The directors of low-performing bands did not all use published instrumental ensemble books as part of skill development/warm-up time. Directors L and P each used skill books each day, the same books used as Directors A and C. Director M used the same book as Director L, but on only one of the three days of rehearsal. Directors N and O did not use any published or supplemental materials on any of the three days of rehearsal. Scales were played each day in rehearsals of Directors L, P, and M. All 12 major scales were played each day in the rehearsals of Director P. Director L rehearsed the B-flat major, F major, and E-flat major scales each day, using different rhythmic patterns. Directors M played the B-flat major scale each day using a tongue-slur pattern.

Directors L and M used the same chord progressions (not a chorale) every day near the end of skill development/warm-up time, arranged in B-flat major. Director P used a different

chorale each of the three days, each by Bach in the keys of E-flat major, F major, and A-flat major. Directors N and O did not use chorales.

Additional materials were used only in the rehearsals of Director P. A rhythm sheet utilizing a time signature of 6/8 was used on all three days, reflective of selected concert repertoire. Directors P additionally used an articulation sheet each day that focused on five common note length applications: slur, tenuto, accented, marcato, and staccato.

For Directors L-P, only Director P used sight-reading during any of the three days of recorded rehearsal. The two selections used collectively represented the key signatures of C major, F major, B-flat major, and E-flat major. The variety of time signatures included 2/4, 3/4, 4/4, 2/2, and 6/8. Procedures for sight-reading were similar to those demonstrated by Directors B, D and E, which included a brief period where important compositional aspects of the piece to be sight-read were identified, including key and time changes, as well as tempo markings/changes, stylistic indicators, and textures and phrases of *tutti* versus section or solo/*solis* based passages. Director P often pointed out certain aspects of the music while the band sight-read each piece. Feedback was given after each sight-reading performance.

As with Directors A-E, each band was attending a district or state sponsored music festival where a required music list was used as a required part of music selection for repertoire to be played at the festival/contest. Excluding the march selected by each director, Directors L-P selected ten pieces of music (Director O did not program a march). The difficulty rating given to each piece by its publisher was used to report a number reflective of the difficulty ratings of concert repertoire for each band, and subsequently each group of band directors. Directors L and O programmed a difficulty rating of 6. Directors M and N each programmed a difficulty level of

7. Director P, at the smallest school, also programmed a difficulty level 7. The mean difficulty level for Directors L-P was 6.6 compared with 8.6 for Directors A-E.

Of the ten pieces selected from each band's respective prescribed music list, two selections did not appear on any other states' prescribed music lists at the time of this study (Appendix D). Each of these two pieces is over ten years old, suggesting a possible lack of recognition of the compositions as worthy of being an important part of the instrumental ensemble curriculum. Only two of the ten pieces appear on any of the standard or "core" repertoire lists compiled by the leading expert directors in the field of instrumental music (Appendix E and F). Including the marches selected for performance, only one composer represented by the 15 selections has an international level of recognition in all areas of music performance: Vincent Persichetti. One composer is recognized widely in instrumental performance arenas: Frank Ticheli. Both of these composers were represented by the concert repertoire of one of the five directors of low-performing bands: Director P.

CONDUCTING EVALUATION ANALYSIS OF MATCHED PAIRS OF DIRECTORS: DIRECTORS A & L

Director A scored 159 points out of 200 for conducting. Director L scored 145. The two directors scored most commonly for the category of confidence with Director A awarded a mean score of 23 and Director L, 20. Judge critiques for Director A indicated more conducting strengths for technical aspects of conducting (start & stops, tempo, conducting plane, beat pattern) and most weaknesses for conducting aspects most often, though not exclusively, associated with conveying musical information, including facial use, gestures, and left hand use.

Judges' critiques for Director L largely indicated more strengths for musical aspects of conducting and less strengths for technical aspects.

CONDUCTING EVALUATION ANALYSIS OF MATCHED PAIRS OF DIRECTORS: DIRECTORS B & M

Directors B and M were awarded considerably different conducting scores, 173, and 109 respectively. Of the ten participants, Director B was awarded the third highest score, Director M, the lowest. Director B recorded a higher score in all eight categories, each worth 25 points, showing a difference in each category of 5 to 10 points higher than Director M. Director B showed equal strength in all categories, with the two areas indicated as showing most room for improvement as left hand use and facial use. Director M indicated weaknesses in all areas, particularly conducting plane and facial use.

CONDUCTING EVALUATION ANALYSIS OF MATCHED PAIRS OF DIRECTORS: DIRECTORS C & N

Director C scored the highest of all ten directors with a score of 185. Director N's conducting was indicated as the weakest of the ten participants. With each category worth 25 points, Director C scored 22 points or higher in each category. Areas suggested for improvement were facial use and beat pattern clarity during faster passages. Director N scored highest for baton hand use, beat pattern, and confidence. Greatest weakness and repeated suggestion for improvement were in the areas of facial use, left hand use, starts & stops, and maintaining tempo.

CONDUCTING EVALUATION ANALYSIS OF MATCHED DIRECTORS:
DIRECTORS D & O

Both Directors D and O were awarded scores in the top five of the ten directors (171 points versus 158). Each director scored similarly in each of the eight categories except conducting plane and starts & stops, with Director D scoring higher in each case. Director D received suggestions for improvement that included left hand use to convey musical ideas and less mirroring of the right hand, as well as suggestions for more facial use. Judges indicated areas of improvement for Director O in the categories of conducting plane, left hand gestures, tempo maintenance, and clarity of baton *ictus*.

CONDUCTING EVALUATION ANALYSIS OF MATCHED PAIRS OF DIRECTORS:
DIRECTORS E & P

Directors E and P scored most similarly of the matched pairs of directors recording scores of 148 and 147. Both directors scored comparably in each category. Each conductor received suggestion for needed improvement regarding clarity of gestures, facial use, tempo maintenance, stance, and confidence.

USE OF TEACHING MATERIALS INCLUDING SIGHT-READING PIECES &
REPERTOIRE SELECTIONS OF MATCHED PAIRS OF DIRECTORS:
DIRECTORS A & L

Director A used the same ensemble skill book each of the three rehearsals. All twelve major scales were rehearsed each day with the students playing from memory. A chorale in B-

flat major by Bach, arranged for band, was used each day just before tuning and repertoire rehearsal. Supplemental materials were used each day including rhythm sheets. Director A's students sight-read each day using three various grade 3 and 4 music selections. Concert repertoire for Director A included a march, and two selections with one graded as difficulty level 5 and one graded as level 6. All three composers of the selected repertoire have international reputations for composition: Darius Milhaud, Percy Grainger, and John Phillip Sousa. Each piece of repertoire appears in various published collections of the highest recommended wind ensemble music by the leading conductors/educators in band education.

Director L used the same ensemble skill book each rehearsal. The scales of B-flat major, F major and E-flat major were played through once each day. A chord progression in B-flat major was played each day just before the band tuned to concert B-flat. No supplemental materials or chorales were used. Concert repertoire for Director L included a march and two additional selections, both graded with a difficulty level of 3. Two pieces were written by the same composer. None of the three compositions appears in the published collections of the highest recommended wind ensemble music by the leading conductors/educators in band education.

USE OF TEACHING MATERIALS INCLUDING SIGHT-READING PIECES &
REPERTOIRE SELECTIONS OF MATCHED PAIRS OF DIRECTORS:
DIRECTORS B & M

Director B used a skill development/warm-up book each of the three days of rehearsal. Scales were rehearsed each day using various combinations of slur, articulation, and rhythm patterns. Keys of the scales rehearsed were reflective of the keys included in the concert

repertoire compositions and each day's sight-reading selections. The same chorale was rehearsed each day, a chorale by Bach arranged for winds in B-flat major. Because part of the concert repertoire included brass performers to use multiple tonguing techniques, Director B used multiple tonguing sheets each day as part of skill development/warm-up time. Repertoire included a march and two grade 3 pieces. All three composers are known in instrumental music arena: Karl King, Frank Ticheli, and Larry Deahn. The later two composers are fairly new to the composition profession, but have already gained recognition in most of the leading publications that list the highest quality concert literature for wind bands.

Director M used a skill development/warm-up book on one of the three days of rehearsal. Supplemental materials were not used during any of the three rehearsals. The same B-flat major scale pattern was rehearsed once through each day. Though a chorale was not used, a chord progression in B-flat major was played each day before tuning. No sight-reading was utilized. Concert repertoire included a march and two selections. One composition was graded as a level 4 and one was graded as a level 3. The march was composed by Karl King. The remaining two compositions did not appear on recommended music lists at the time of this study.

USE OF TEACHING MATERIALS INCLUDING SIGHT-READING PIECES &
REPERTOIRE SELECTIONS OF MATCHED PAIRS OF DIRECTORS:
DIRECTORS C & N

Director C used the same skill development/warm-up book for all rehearsals. All 12 major scales were rehearsed each day, which students performed from memory. A different Bach chorale was rehearsed each day in the keys of E-flat major, F major and D minor (keys prevalent in the concert repertoire). Supplemental materials were used including rhythm sheets and

articulation exercises. Sight-reading was included everyday using selections graded as level 3 or 4. A march by Camille Saint-Saëns was part of the repertoire. The additional two pieces by composers Norman Dello Joio and Morten Lauridsen were each graded level 5.

Director N did not use skill development/warm-up books or supplemental materials. Scales or chorales were not utilized. Director N's students did not sight-read during the three days of observation. Concert repertoire included a fanfare and two additional selections graded level 3 and 4. None of the compositions appeared on recommended literature lists of leading conductors/education in the field of band education.

USE OF TEACHING MATERIALS INCLUDING SIGHT-READING PIECES &
REPERTOIRE SELECTIONS OF MATCHED PAIRS OF DIRECTORS:
DIRECTORS D & O

Skill development/warm-up books were used all three days of rehearsal of Director D. Scales were rehearsed each day and reflected the keys most prevalent in the concert repertoire and sight-reading selections. Two sight-reading pieces were graded as level 4 and one was graded level 3. A Bach chorale in F major was used two of the three days of rehearsal. Concert repertoire included a march by Karl King. Graded as a level 5, "La Forza Del Destino" by Verdi was part of the repertoire, as was "Rhosymedre" (grade 4) by Ralph Vaughn Williams. Both of these selections represent the only two transcriptions programmed by Directors A-E. All three composers have an international reputation of quality composition, with the later two pieces appearing on published lists of the highest quality repertoire for bands.

Director O did not use skill development/warm-up books, chorales, supplemental materials, or sight-reading as part of class materials. Director O was the only director to not

include a march as part of the concert repertoire (a fanfare was programmed). The three compositions used were all graded as difficulty level 3. None of the three pieces appears on published lists of the highest quality repertoire for bands.

USE OF TEACHING MATERIALS INCLUDING SIGHT-READING PIECES &
REPERTOIRE SELECTIONS OF MATCHED PAIRS OF DIRECTORS:
DIRECTORS E & P

Both Directors E and P used skill development/warm-up books each of the three days of rehearsals. Each rehearsed all 12 major scales each day and used articulation and rhythm exercise sheets. Director E's students sight-read a grade 4 piece on one of the three days of rehearsal. Director P's students sight-read two of the three days with both pieces graded as level 3. Director E rehearsed the same B-flat major chorale each day. Director P rehearsed a different choral each day written in the keys of B-flat major, F major, and A-flat major, keys of the concert repertoire. Both directors used rhythm sheets and articulation exercises everyday.

Concert repertoire for both directors included music by highly acclaimed composers whose selections for band are widely recognized as high quality literature with representation on many lists of "core" repertoire. Concert music programmed by Director E included a march by John Phillip Sousa, a grade 3 piece by Percy Grainger, and a grade 4 selection by Ralph Vaughn Williams. Director P also programmed a march by John Phillip Sousa, a piece by Vincent Persichetti (grade 4) and a piece by Frank Ticheli (grade 3).

CHAPTER 5

DISCUSSION

Though various musical, educational, and social outcomes of a high school band program are regularly expressed as being valuable to the students, school, and community it serves, the success of a high school band program is most often measured by the quality of its performances. Subsequently, high school band directors who can produce consistently high-performing bands are viewed as being expert teachers, specifically, possessing expertise in the profession of high school band directing. Public performances are often the culminating result of several weeks or months of rehearsal, and often include contest/festival performances that are evaluated by peer band directors identified as experts. The purpose of the present study was to record and analyze band director behaviors that may contribute to performance quality outcomes for high-performing and low-performing bands.

Ten high school band directors were classified into one of two categories, directors of high-performing bands or directors of low-performing bands, based on audio recordings of concert performances. Additionally, the directors from the two categories were matched in terms of years of experience, educational background, and current teaching environment in an effort to eliminate possible causal relationships between these factors and student performance outcomes. Each director was videotaped over three consecutive days within two weeks before a music festival/contest (30 rehearsals). Each entire class period was observed to assess how each

director made use of the total allotted class time. Concert repertoire rehearsal was specifically analyzed by looking at selected rehearsal segments (selected rehearsal frames) where two or more student performance trials were utilized to improve the performance of, or to inform students about specific elements (targets) of the concert music. These selected rehearsal frames were examined to ascertain the frequency, rate, and durations of teacher and student behaviors that were part of the rehearsal process. Additionally, field notes were taken during all rehearsals and each director was interviewed to determine different and common factors that may have affected the performance quality outcomes of each respective band program. Teaching materials utilized for each rehearsal, and each director's conducting were also identified for evaluation.

Through the collection of video and written data, I attempted to answer research questions that may offer an informed description of the behaviors of directors of high-performing versus directors of low-performing bands.

The first research question asked:

When analyzing classroom behaviors that are shared and different between and among directors of high-performing and low-performing high school bands, what proportions of each director's entire allotted classroom time are devoted to the following five categories: repertoire rehearsal, play-through performance (music not explicitly receiving instruction), skill development/warm-up, sight-reading, and non-instructional time use? How do these proportion allocations compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?

USE OF TOTAL ALLOTTED CLASSROOM TIME:
FINDINGS BETWEEN AND AMONG DIRECTORS OF HIGH-PERFORMING
AND LOW-PERFORMING BANDS

Directors of high-performing bands were observed for a total of 810 minutes of class time, and had a mean class length of 54 minutes. Directors of low-performing bands were observed for a combined total of 825 minutes of class time, and had a mean class length of 55 minutes. All participating directors taught on a six- or seven-period day schedule. Of five class time use categories: repertoire rehearsal, play-through performance (music not explicitly receiving instruction), skill development/warm-up, sight-reading, and non-instructional time use, directors A-E and L-P demonstrated some time use behaviors in common. Most similar was the proportion of time devoted to repertoire rehearsal, with Directors A-E dedicating 47.55% and Directors L-P dedicating 46.77%.

Time spent playing through music without explicit rehearsal goals was additionally similar (play-through performance), with directors of high-performing bands dedicating slightly more time (18.25% of class time) than directors of low-performing bands (16.90%). It is important to note that four of five directors of high-performing bands listed “run-throughs” or some facsimile on their respective marker boards in the front of their classrooms as part of each rehearsal, communicating the order of events planned for each day. These particular planned “run-through” events accounted for most of their observed play-through performance time. Each director reminded the students at various times that playing through each piece in its entirety was integral to the success of performing the selections in a way that resembled what would happen at the upcoming public performances. Among directors of low-performing bands, Director P explicitly listed “run-throughs” on the marker board at the front of the classroom on two of the three video taped rehearsals. Directors L, M, N and O often started musical selections without identifying rehearsal targets or the purpose for the activity, using only one student performance

trial. These events accounted for most play-through performance time for directors of low-performing bands.

It is interesting that all five directors of high-performing bands had scheduled a public concert the week before contest (each within a week of being videotaped). Several directors commented that this was important for the band's success at their contest performance. Directors A, C, D and E stated that in addition to performing their concert repertoire at their respective public concerts, they would sight-read a piece of music additionally, as a means to help students be more comfortable in front of an audience, simulating certain aspects of sight-reading at contest. During the interview process, several directors of low-performing bands stated that they would play "straight through" the concert program the day before or the day of contest. This strategy for developing performance skills was much different from the one demonstrated by directors of high-performing bands in that students had much fewer opportunities to perform each piece in its entirety, and no opportunity to perform for a live audience prior to contest.

Both groups of directors devoted time to skill development/warm-up, with Directors A-E dedicating a larger mean portion of class time with 12.04% versus 8.32% for directors L-P. Though directors of high-performing bands stated that skill development/ warm-up procedures were usually much shorter at the time of year when observed for this study, the mean proportions of time spent using skill books, playing scales and chorales, and using additional supplements, were more than two times longer than the mean proportions shown for directors of low-performing bands.

Table 19 shows sub-categories of skill development/warm-up time: skill books use, scales, chorales, supplements, and tuning. Time spent tuning was the only skill development/warm-up sub-category where directors of low-performing bands spent more time

than directors of high-performing bands, demonstrating a mean duration of 3.04 minutes versus 0.74 per rehearsal for Directors A-E. This may be in part because in all rehearsals of Directors A-E, students were observed tuning on their own to a tuning device or tuning CD before group rehearsal began. After skill building/warm-up, each director of a high-performing band prompted the principal oboe or clarinet player to sound a B-flat and/or F with all band members playing afterwards, adjusting their instruments as needed.

Table 19

Use of Skill Development/Warm-Up Time Divided into Sub-Categories of Skill Books Use, Scales, Chorales, Handouts, and Time Spent Tuning by Directors of High-Performing Bands and Directors of Low-Performing Bands Expressed as Daily Mean Duration in Minutes.

Director	Skill Books	Scales	Chorales	Handouts	Tuning
A	1.28	1.67	.57	.37	.52
B	2.52	1.20	1.05	.53	.73
C	1.38	1.73	.65	.92	.65
D	2.43	1.52	1.00	0.00	.90
E	2.77	1.97	1.96	2.28	.90
group mean	2.08	1.62	1.05	.92	.74

Use of Skill Development/Warm-Up Time Divided into Sub-Categories of Skill Books Use, Scales, Chorales, Handouts, and Time Spent Tuning by Directors of Low-Performing Bands Expressed as Daily Mean Duration in Minutes.

Director	Skill Books	Scales	Chorales	Handouts	Tuning
L	1.02	.67	.45	0.00	1.25
M	.32	.20	.33	0.00	2.12
N	0.00	0.00	0.00	0.00	2.77
O	0.00	0.00	0.00	0.00	2.98
P	1.00	1.99	.48	.45	6.07
group mean	.47	.57	.25	.09	3.0

Students were seen tuning on their own prior to group rehearsal only in a few cases during classes of directors of low-performing bands. The mean duration of daily tuning time for Directors L-P of 3.04 minutes was three times longer than time spent playing scales, the second longest skill activity duration demonstrated daily by Directors L-P (0.57 minutes). Each director of a low-performing band demonstrated a tuning method where each student played individually, with the director watching an electronic tuner, informing the students of their tuning accuracy or inaccuracy, often telling each student which way to adjust their instrument. Though students were often told to adjust their instrument, a second individual performance trial was not regularly utilized to re-check pitch. This method demonstrated by Directors L-P can be defined as a procedure where students are dependent on the directors, whereas the method demonstrated by Directors A-E shows a process where students are independent of the director. The independent approach may be the result of intentional training that allows students to control intonation on their instruments and subsequently during performance. Judge evaluations of both sets of directors' submitted recordings indicated that intonation was a strength of the student performances lead by Directors A-E and an extreme weakness of the bands of Directors L-P.

In Chapter 4, Table 4 indicates that the mean duration for set-up time at the beginning of each class for Directors L-P was 11.76 minutes, 3% more than was shown for Directors A-E. With a mean daily duration of 11.38 minutes, pack-up time was more than double that of Directors A-E. Transition time revealed the most prominent difference between both groups of directors, showing a mean proportion of 12.79% of available rehearsal time for a mean duration of 21.26 minutes for Directors L-P, a difference of 2.28 times more rehearsal minutes than Directors A-E who demonstrated a mean class time proportion of 5.61%, which was 9.06 minutes of class time.

Differences of class time proportion were observed regarding sight-reading, with students in high-performing bands sight-reading ten of fifteen rehearsals demonstrating a mean proportion of class time of 9.38%. Among directors of low-performing bands, only Director P sight-read in any of the 15 rehearsals videotaped for Directors L-P, with 1.56% of class time shown for this group. Each of the ten participating band directors stated in their respective interviews that sight-reading was part of the performance requirements at the approaching festival/contest. Two directors of low-performing bands stated that their students would only sight-read a few days before the performance date. Four of the directors of low-performing bands stated that they needed to improve their band's sight-reading skills, but could not afford to take too much time away from concert repertoire rehearsal. Interestingly, four directors of high-performing bands stated that while their band does sight-read more often prior to contest, they make sight-reading a part of every week's rehearsal schedule regardless of contests, each suggesting sight-reading as an important curricular goal regardless of to more great literature in addition to the music selected as concert repertoire. During sight-reading student performance trials in rehearsals of Directors A-E, the music was performed on a high level and students often appeared to be enjoying the experience. Students appeared to be much more relaxed and confident than did students during sight-reading performance trials of Director P (the only director of low-performing bands who was observed rehearsing sight-reading).

Time allocated to retrieve and assemble instruments, transitions between different rehearsal activities, and time to put instruments and materials away are all part of band rehearsals. Such non-instructional time use was extremely different between directors of high-performing and directors of low-performing bands. Directors A-E devoted a mean proportion of 12.78% of class time to non-instructional activities. Conversely, Directors L-P devoted 26.75%,

to non-instructional activities, more than twice the amount of time demonstrated by Directors A-E and more than one fourth of total available class time.

The general pace and overall classroom environment seemed to contribute to how non-instructional time was used for each group of participants. At the start of each class period, Directors A-E more often than not stood at the band hall entrance or near instrument storage areas, greeting students personally and encouraging expedient movement to the seating area. In rehearsals of all five directors, students were engaged in the daily start-of-class routine, which included various activities such as moving equipment, turning on tuning devices, tuning their instruments, adjusting stands, placing skill materials on music stands, and checking the board for the rehearsal's planned activities. There was an obvious sense of controlled urgency. As certain unpredictable events can often interrupt curricular goals, there was also a clear system in place for dealing with non-curricular logistics such as signing papers, taking late slips, repairing broken instruments, and replacing forgotten or lost music. Directors A-E often remained on the podium between activities, again encouraging expediency. Additionally, each director of a high-performing band used at least one transition period per rehearsal to make announcements, rather than doing so at the beginning or end of rehearsal as demonstrated by Director L-P. During class time of directors of high-performing bands, pack-up activities were often extremely brief, with four of the five directors requiring students return to their seats before dismissal. In each of these incidences, students were seen straightening the chairs and stands for the next class.

For rehearsals of Directors L-P, daily routines and classroom procedures were much less predictable and less orderly compared to those of Directors A-E. Directors of low-performing bands were often in their offices during the first few minutes of each class. During one rehearsal, Director N remained in the office for 12 minutes before entering the main rehearsal space.

Directors L-P were regularly observed setting up chairs, stands, and equipment at the start of each class, utilizing student help much less than directors A-E. The time between the sounding of the tardy bell and when the first teacher-directed activity began was different each day for all directors except Director P. At the start of rehearsals of directors of low-performing bands, students sometimes sat in their seats without being prompted to do so. In several cases however, students only sat down when asked. In most rehearsals, students approached the band director at the start of class and between activities to ask questions, have broken instruments repaired, or to get new copies of music, thereby slowing down the pace and lessening the predictability of rehearsal. In only one school did an assisting director take care of logistical issues, allowing the instructor of the band to rehearse with little or no interruption. Directors L-P more often than not left the podium during activity transition time, sometimes returning to the band office. The amount of time to pack-up at the end of each of the three days was consistent only for Director P, who averaged just under 2 minutes between the end of rehearsal and the sounding of the dismissal bell. Pack-up time for Directors L, M, N and O ranged from 2 minutes to 12 minutes, with the end of rehearsal seemingly based on a decision made at the moment and not as part of detailed time planning for accomplishing class goals. In all rehearsals of directors of low-performing bands, students lined up at the door rather than returning to their seats after packing-up, having left the rehearsal space fairly disorganized and not set for the next band class.

It was also noted that in rehearsals of directors of low-performing bands, off-task student behavior often occurred during transition time or at the beginning of a new activity, with the student(s) demonstrating off-task behavior that was started during transition time and had not ended once the director had begun a new activity.

USE OF TOTAL ALLOTTED CLASSROOM TIME: FINDINGS BETWEEN DIRECTORS IN MATCHED PAIRS

For each director with a low-performing ensemble who participated in the study, there was a director of a high-performing band that shared a similar budget, school size, educational background, years of experience, number of students taking private lessons, school demographics, schedule, available class time, available assistance, number of feeder programs, and rehearsal facility. Though there were data points that were common between directors of each matched pair, most observed behaviors between the two directors were different, sometimes markedly so. When looking at how the proportions of total class time were allocated in five specific categories between matched pairs of directors, both of the directors in each of the five pairs demonstrated the largest proportion of class time going to the rehearsal of repertoire. In each matched pair, directors of high-performing bands used a higher percentage of class time (ranging from less than 1% to just over 4% more) for repertoire rehearsal as compared to their counterpart, except Director B who used approximately 2% less than Director M. Beyond the category of repertoire rehearsal, each matched pair differed in the priority ranking and proportion of time use for each of the four remaining categories, except Directors E and P. Both Directors E and P demonstrated the same class time priority order based on proportion of class time. Repertoire rehearsal ranked first, followed by skill development/warm-up, play-through, non-instructional time, and finally, sight-reading. Directors E and P also demonstrated similar percentages of time devoted to each category, with differences ranging from 0.24% to 4.16%. Given that only one director of a low-performing band, Director P, did sight-reading with their ensemble, the percentages of time attributed to that category was quite different between directors in each pair except E and P.

For the four matched pairs besides E & P, time use categories other than repertoire rehearsal indicate not only differences in priority of each activity based on proportion of time, but that the percentages differ per activity. These duration comparisons reveal differences between matched directors ranging from just under 0.50% to as much as just over 20% of time duration per category. Time allocations were often demonstrated as double for one director compared with his counterpart. Rehearsal behaviors of directors of high-performing bands and low-performing bands are much more similar within their respective groups than with their matched counterparts.

It should be restated that the research design in this study aimed to eliminate as many factors as possible that may have been seen as being responsible for the level of student performance, outside of director behaviors. Though no two teachers can be perfectly matched in all regards, certain elements that are often associated with quality band programs (funding, school size, private instruction) were addressed in the matching process. With many more similar professional and teaching environment traits than dissimilar, it remains that the evaluation of student concert performance resulted in the placement of one member of each matched pair into the high-performing or the low-performing group.

The second research question asked:

When observing repertoire rehearsal where specific aspects (targets) of the music are addressed for improvement, with two or more student performance trials before moving to a different rehearsal target(s) of the music, what are the different and shared frequencies, rates per minute, durations, and time allocations for each specified rehearsal target category between and among directors of high-performing and low-performing high school bands? How do these statistics compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?

TARGET CATEGORY USE DURING SELECTED REHEARSAL FRAMES:
FINDINGS BETWEEN AND AMONG DIRECTORS OF
HIGH-PERFORMING AND LOW-PERFORMING BANDS

The current study indicates that participating directors of high-performing bands and directors of low-performing bands were observed demonstrating similar rates per minute of selected rehearsal frames (0.52 versus 0.58), with a similar mean duration per frame of approximately 2 minutes. Student performance trial rates per minute and mean student performance trial durations, however, were appreciably different. Directors of high-performing bands demonstrated a much faster pace during repertoire rehearsal, averaging more than one additional student performance trial per minute than did directors of low-performing bands, with each student performance trial averaging 8.69 seconds shorter in length (16.02 seconds versus 24.71 seconds) (higher frequency with short duration as demonstrated by experts previously reported by Goolsby, 1996, 1997; Cavitt, 1998; Worthy 2003, 2006). Observation revealed that directors of high-performing bands often repeated a student performance trial after teacher feedback had indicated the performance level had met the director's expectations. Similar to findings by Cavitt (1998, p. 57), in many cases the "corrected" student performance trial was repeated a second or third time, with the directors giving subsequent positive feedback each performance (positive reinforcement). Field notes indicated that directors of low-performing bands did not usually repeat student performance trials where performance expectations had been met as indicated by positive feedback; once a correction was made, the directors moved to a new selected rehearsal frame without repeating the "corrected" student performance trial.

Directors A-E and Director L-P demonstrated similar approaches with target category priority. Each group devoted the greatest amount of selected rehearsal frame duration to the target category of tone/intonation, with articulation and rhythm ranked as both groups' second

and third target by time use. Of these three targets, the two groups of directors rehearsed tone/intonation the most differently. Table 20 shows frequency and duration of the category of tone/intonation divided into two separate rehearsal targets, tone, and intonation. Though Directors A-E often described tone and intonation as symbiotic playing fundamentals, verbalizations in the form of information or directives qualified each student performance trial as belonging more to one category than the other (i.e. tone or intonation).

Table 20

Frequency of Student Performance Trials for Tone and Intonation by Duration Expressed in Minutes for Directors of High-Performing Bands.

Director	Target Category: Intonation		Target Category: Tone	
	<i>f</i>	Minutes in decimals	<i>f</i>	Minutes in decimals
A	68	11.25	24	2.50
B	61	8.12	19	3.23
C	148	20.17	37	6.82
D	56	6.92	31	4.97
E	75	10.80	24	5.12
total	408	57.26	135	22.64
mean	81.6	11.45	27	4.53

Frequency of Student Performance Trials for Tone and Intonation and Duration Expressed in Minutes for Directors of Low-Performing Bands.

Director	Target Category: Intonation		Target Category: Tone	
	<i>f</i>	Minutes in decimals	<i>f</i>	Minutes in decimals
L	51	21.45	8	1.30
M	18	2.37	3	.52
N	35	5.87	1	.37
O	61	8.22	0	0.00
P	50	13.27	2	.57
total	215	51.18	14	2.76
mean	43	10.24	2.8	.55

Directors A-E devoted 71.67% of the category of tone/intonation to intonation, and 28.33% to tone. Directors L-P demonstrated much different amounts with 94.90% devoted to intonation and only 5.10% devoted to tone. Directors of high-performing bands used all three student performance categories for improving the rehearsal target of tone/intonation (individual performance, section performance and full ensemble performance). In each high-performing director's rehearsals, singing was often used to aid intonation skills as was individual student modeling. Students seemed comfortable and eager when singing or modeling. Diagnoses for tone and intonation flaws were varied and included air speed, hand position/fingerings, posture, embouchure, head or chin angle, equipment issues, and body tension. When addressing tone/intonation, directors of low-performing bands almost exclusively used the method of having students play one at a time in "chair order," giving each individual student feedback on his or her performance of a targeted pitch based on readings on an electronic tuner positioned close to the director. This method accounted for much of the reported frequency amounts for individual performance for directors of low-performing bands. In rehearsals of Directors L-P, students were asked to sing only in rehearsals of Director P; students were apprehensive and seemed uncomfortable singing. As was described earlier in reference to tuning procedures at the end of skill development/warm-up time for both groups of directors, addressing tone/intonation was approached by directors of high-performing bands in a way that promoted a level of student independence, with directors of low-performing bands approaching the same target category using a method that promotes dependence on the teacher. Tone production was also an integral part of skill development/warm-up time for Directors A-E, if not the predominant point of teaching during that time. Tone production was mentioned much less often in rehearsals of Directors L-P.

Although both sets of directors utilized the same number of frames dedicated to multiple targets (23), directors of low-performing bands demonstrated fewer student performance trials over a longer period of time than directors of high-performing bands, suggesting a less efficient rehearsal pace compared to directors of high-performing bands. Additionally, directors of low-performing bands often failed to make noticeable headway on any of the identified single targets within the multi-target selected rehearsal frames. This observation is interesting in that for Directors L-P, the top three greatest proportions of teacher talk time were represented by the three categories of multiple target category frames (multiple Targets [4] with 80.84%, multiple Targets [3] with 54.09%, and multiple Targets [2] with 52.92%). This data may explain why many of these multi-target category frames were initially difficult to classify and were some of the least effective for producing change. Lengthy directives may have caused students to become unclear as to the specific objectives of each trial. Directors A-E demonstrated mean durations of selected rehearsal frames with multiple targets more than twice as long as was demonstrated by Directors L-P (3 minutes 4 seconds versus 1 minute 13 seconds). During multiple target category frames, teacher behaviors of directors of high-performing bands included modeling and teacher directives, while no modeling was observed during multiple target frames for directors of low-performing bands. Multiple target analysis by Cavitt (1998) demonstrated the same findings for expert directors, suggesting that because of the nature of including more targets upon which to concentrate, the use of more time was “as might have been expected.” (p. 97). Longer duration by Directors A-E also provided time for more repetitions of “corrected” student performance trials. Additionally, student performance trial mean durations for Directors A-E were demonstrated as the longest of all target categories, again, these findings being similar to those of

Cavitt who reported multiple target category frames to be longer than all other target categories (1998, p. 97).

Directors A-E spent 10% more of rehearsal time and over 96% of all student performance trials on their six most frequented targets, over 20% more than directors L-P, indicating that within two weeks of a performance, directors of high-performing bands concentrated on fewer rehearsal targets. Directors A-E averaged three more student performance trials per frame than Directors L-P while rehearsing their top six targets, and 3.5 more student performance trials per frame while rehearsing their top three targets. Though this format of rehearsal could reflect “drilling,” as cautioned by Battisti (2002), it was the impression of the researcher that the fast pace was neither “drilling” nor frantic, but rather a product of the types of targets being rehearsed, and that other targets were represented by a high level of achievement. Specific rhythm, articulation, and tone/intonation issues are more often than not present during the course of only a few beats of music, requiring little time to isolate the specific target for improvement.

Of the top six most-rehearsed targets for both sets of directors, pitch accuracy and tempo are the two targets not shared by both groups, with directors of high-performing bands including tempo and directors of low-performing bands including pitch accuracy. It is interesting to look specifically at the target of pitch accuracy. Directors L-P spent over 11% more time devoted to correcting wrong notes than did Directors A-E. The specific cases of pitch correction for directors of low-performing bands often involved errors attributed to students not playing in the correct key. On most occasions, Directors L-P would point out the incorrect pitches and model the correct fingering or slide position. In rehearsals of directors of high-performing bands, the largest majority of time devoted to pitch accuracy was attributed to errata (notes wrongly printed by the publisher), or to brass students playing on an incorrect partial, often during passages of

advanced harmonic language where finding the correct pitch may have been more difficult. Directors A-E were not observed modeling the correct fingerings or slide positions, suggesting that doing so was not necessary; students had the knowledge of how to correctly realize the identified pitch and demonstrated such by performing the correct pitch on the next subsequent student performance trial. Cavitt (1998) referred to “performance proximity” as a possible explanation for why expert directors in her study were rarely observed correcting wrong notes within two weeks of a performance; with the concert performance being two weeks or less away, it is rightfully assumed that high-performing bands would have already corrected wrong notes so that “finer” details of the music could receive due attention.

Exclusion of certain target categories as rehearsal priorities may be reflected negatively in student performance. For example, when concert recordings were evaluated initially for Directors L-P, tempo was indicated as a student performance flaw for all five directors (tempo was also indicated as a conducting deficiency for Directors L-P). In the rehearsals observed in this study, this group of directors did not place tempo as a rehearsal target priority, suggesting that because tempo is not a rehearsal priority, excessive tempo flaws exist in performance. One should be cautioned however that employing specific target priorities does not necessarily result in high-performing ensembles.

It is also interesting to note that among the initial evaluations of the recordings of high-performing bands (recordings reviewed that placed them in the high-performing category), most negative or constructive comments involved subjective factors such as interpretive choices. Positive comments made by evaluators largely reflected the targets upon which the directors allocated most time and frequency of student performance trials during observation: tone/intonation, articulation, rhythm, tempo, and dynamics. Conversely, though directors of low-

performing bands devoted most of rehearsal time to these same targets, evaluators' comments of their recordings reflect most performance flaws to exist in these specific aspects of performance. This of course points to other factors as reasons for high-level performances, specifically how targets are rehearsed and not exclusively what targets are rehearsed.

TARGET CATEGORY USE DURING SELECTED REHEARSAL FRAMES: FINDINGS BETWEEN DIRECTORS IN MATCHED PAIRS

As with data pertaining to the allocation of total class time for each director, the data collected from selected rehearsal frames indicates more differences between matched pairs of directors than between directors within their high-performing or low-performing director groups. When comparing the frequency, duration, and rate per minute of rehearsal target categories (smaller increments within broader class time activities) the number of differences between the matched pairs of directors was greater. Each pair of directors shows one or two out of the three most rehearsed target categories to be common between them, with Directors E and P showing all of the top three targets in common, though in a different order of priority. A comparison of all twelve target categories indicates that matched pairs of directors only occasionally demonstrate like proportions of time per frame category or number of selected rehearsal frames per category, student performance trials per frame, mean student performance trial durations, or rates per minute for each target category.

The third research question asked:

Within rehearsal frames selected for further analysis, what are the different and shared frequencies, rates per minute, durations, and time allocations of specific teacher and student behaviors between and among directors of high

performing and low-performing high school bands? How do these statistics compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?

TEACHER AND STUDENT BEHAVIORS WITHIN SELECTED REHEARSAL FRAMES: FINDINGS BETWEEN AND AMONG DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS AND MATCHED PAIRS OF DIRECTORS

As data analysis in this study moved from larger categories of time use and rehearsal target categories, to specific teacher and student behaviors within selected rehearsal frames, even fewer commonalities were indicated between directors of high-performing and low-performing bands. Though some statistics show similarities between the two groups of directors, teacher rehearsal objectives and methodologies within frames indicate differences that may lead to different student performance outcomes. Time devoted to teacher behaviors and student behaviors were similar to those found by previous researchers where novice and expert teachers were compared (Goolsby 1996, 1997, 1999; Madsen & Standley, 1991; Bergee, 2005). It should be mentioned that though the terms *expert* and *novice* have not been used frequently in this study as labels for either group of directors, comparisons to previous research that contrast behaviors of novice and expert music teachers reveal that directors of high-performing bands in this study compare as experts and directors of low-performing bands compare as novices. Similar to previous research of expert versus novice teachers (Goolsby 1996, 1997, 1999, Cavitt 1998, Worthy 2003, 2006), Directors A-E (experts) spent 47.92% of selected rehearsal frame duration devoted to teacher behaviors and 53.23% to student behaviors. Directors L-P (novices) devoted more time to teacher behaviors rather than student behaviors (53.60% versus 46.64%).

One of the few areas that indicated similar statistics between both groups of directors was the teacher talk directives category. For both groups of directors, teacher directives was the most demonstrated teacher verbal behavior, though directors of low-performing bands devoted nearly 10% more time to that category than did directors of high-performing bands. Both groups spent the greatest proportion of time giving directives during the target category of unidentified, Directors A-E devoting 43.25% and Directors L-P, 41.89%. A possible explanation for this amount of time commitment is that as groups were approaching contest performances, certain phrases or sections of the music had been rehearsed sufficiently (as determined by each director) prior to data collection. For directors of low-performing bands, student performance trials during selected rehearsal frames with unidentified targets were typically brief excerpts and usually received succinct feedback (i.e. “good,” “OK”, or “One more time. Let’s see what is going on with this.”). Directors of high-performing bands often included entire sections of music in similar rehearsal frames with unidentified targets. Feedback typically consisted of comments that either indicated something in the performance had been lost or maintained since the last student performance trial of that section of music, though no specific target was named, and that a subsequent student performance trial was needed for improvement or reinforcement.

Interestingly, for Directors A-E, rehearsal frames with unidentified targets were demonstrated exclusively during the marches selected as concert repertoire. The researcher indicated in field notes that at the time of observation of Directors A-E, the marches were generally the most prepared/polished of the 15 repertoire selections. Further explanation for the amount of directives for unidentified targets might include that the marches were the shortest compositions rehearsed, contained no tempo changes, and were written in a typical march style using two contrasting melodic devices, marked and lyrical; the marches, or certain sections

within each march, may have been rehearsed to a level where only occasional review was necessary. For both groups, the repeated student performance trials and nature of feedback kept these unidentified segments from qualifying as play-through time. For Directors L-P, selected frames with unidentified targets were distributed evenly across all repertoire selections, and like Directors A-E, repeated student performance trials received no target category identifications.

Teacher feedback was also one of the few areas where both sets of directors demonstrated similarities, both indicating more negative than positive feedback, with a comparable mean episode length of approximately 2.5 seconds. Rates per minute for negative feedback was also similar with both groups demonstrating a mean of approximately 1.41. Negative feedback mean duration for Directors A-E was 2.36 seconds and 2.74 for Directors L-P. Directors L-P spent more time in teacher feedback, demonstrating a mean proportion of selected rehearsal frame time of 11.46%, compared to 9.6% for directors of high-performing bands.

As demonstrated in most every aspect of this study, analysis of behaviors of the larger appropriated sections of rehearsal show more similarities between the two groups of directors than does analysis within the details of these larger rehearsal categories. The use of teacher feedback demonstrates an appropriate example. Beyond the aforementioned statistical similarities, teacher feedback for both groups was markedly different. Table 21 shows feedback divided into three sub-categories, each based on research by Cavitt (2004) but modified by the researcher: 1) *succinct* feedback responses that only identified the student performance trial as meeting expectations or not meeting expectations (i.e. “okay”, “no”, “pretty good”); 2) *explicit* feedback, responses that identified the student performance trial target category (ies) as showing progress or no progress on a specific element of performance, but did not provide further specific suggestion for improvement and/or reinforcement of musical outcomes (i.e. “Yes, that balance

was much better,” “That release was not better. Let’s do that again.”); 3) and *descriptive/prescriptive* feedback, responses that include/describe suggestions for improvement and/or reinforcement of musical outcomes (i.e. “Very nice. That makes this phrase more punctuated and exciting,” or “No, try again. Take a fuller breath and increase the air speed more on the long crescendo.”).

Table 21

Feedback Sub-Categories Presented as Frequency Counts, with Frequency Mean and Proportion of Feedback Verbalizations for Directors of High-Performing Bands.

Director:	Positive Feedback:			Negative Feedback:		
	Succinct	Explicit	Descriptive/ Prescriptive	Succinct	Explicit	Descriptive/ Prescriptive
A	15	29	17	42	11	43
B	14	27	26	38	13	43
C	18	25	17	46	12	45
D	15	24	29	34	12	61
E	8	10	20	30	6	47
A-E Totals	70	115	109	190	54	239
A-E mean	14.0	22.6	21.8	38.0	10.8	47.4
A-E %	23.97%	38.70%	37.33%	39.50%	11.23%	49.27%

Feedback Sub-Categories Presented as Frequency Counts, with Frequency Mean and Proportion of Feedback Verbalizations for Directors of Low-Performing Bands.

Director:	Positive Feedback:			Negative Feedback:		
	Succinct	Explicit	Descriptive/ Prescriptive	Succinct	Explicit	Descriptive/ Prescriptive
L	15	11	1	22	2	13
M	78	11	2	91	20	18
N	92	14	2	43	9	12
O	46	9	2	63	2	10
P	71	20	4	62	22	37
L-P Totals	302	65	11	281	55	90
L-P mean	60.4	13.0	2.2	56.2	11.0	18.0
L-P %	79.89%	17.20%	2.91%	65.96%	12.91%	21.13%

Table 21 reveals that for directors of high-performing bands, *succinct* responses accounted for the fewest positive feedback statements, while *explicit* responses and *descriptive/prescriptive* responses were similar. Directors of low-performing bands demonstrated approximately 4.5 times more episodes of *succinct* positive feedback responses than the other two sub-categories (302 incidences, 79.89% of feedback responses), which was 55.92% more than directors of high-performing bands (23.97%). *Explicit* responses and *descriptive/prescriptive* feedback were markedly fewer than for directors of high-performing bands. These statistics suggest that directors A-E use feedback more often than not as opportunities to provide specific feedback verbalizations that can reinforce context specific positive student outcomes, as well as offer concise answers for performance improvement.

As shown by Table 21, Directors A-E demonstrated 239 incidences where negative feedback was given with suggestion for improvement, 49.27% of negative feedback responses. *Succinct* responses were recorded with a frequency of 190 for 39.50% of feedback verbalizations, and 54 teacher feedback responses were identified as *explicit* verbalizations with 11.23%. Like Directors A-E, Directors L-P demonstrated *explicit* negative feedback verbalizations the least frequent (55 episodes for 12.91% of negative feedback frequencies). *Descriptive/prescriptive* feedback with suggestions for improvement was demonstrated 55 times for 21.13% of verbalizations, 28.14% less than Directors A-E. Most negative feedback responses were *succinct* verbalizations, 281, accounting for 65.96% of negative feedback frequencies, 26.46% more than Directors A-E. These specific statistics for negative feedback suggest that directors of high-performing bands use fewer *succinct* negative feedback verbalizations and combine feedback responses with suggestions for improvement or reinforcement

(descriptive/prescriptive) of musical outcomes much more frequently than directors of low-performing bands (43.30% of feedback verbalizations versus 12.02%).

As suggested by Cavitt, though negative feedback outnumbered positive feedback, “students did not appear to respond to the negative feedback they received as if it were personally punishing” (1998, p. 145). It is widely acknowledged in the field of education that effects of feedback on student performance are consequential (Covington, 1999; Walberg, 1999; Marzano, Pickering & Pollock, 2001). Though education research largely promotes positive feedback as most necessary for raising student achievement levels, as suggested by Cavitt (1998), the typical procedures of music rehearsals are designed to eliminate error or differences of musical performance interpretations that do not meet the expectations of the conductor. The very nature of what music rehearsals aim to do elicits an environment where the “negative” aspects of the music must be eliminated in order to create a positive outcome as soon as possible. Research by Duke and Henninger (1998, 2002) suggests that when students are asked to evaluate rehearsals containing negative feedback with no suggestions of improvement, versus feedback with directives for improvement, students perceived both methods to be positive, perhaps because discernable improvement was made in either scenario. Music students may have become used to the environment where more negative feedback is experienced than positive feedback (shown by some researchers to be more than double that of positive feedback, Cavitt, 1998, Worthy, 2003) and it is the improvement of the repertoire and the nature in which negative feedback is conveyed that causes students to perceive rehearsals as largely positive.

Directors A-E demonstrated higher frequency counts and more time devoted to asking questions and giving information than did Directors L-P. This in part created an environment in rehearsals of high-performing bands that was more interactive than the rehearsals of directors of

low-performing bands. Goolsby suggests that the “use of focused, high-convergent questions could well assist students in learning more about music and attain a higher cognitive level of music education rather than the lower level of mere performance” (1997, p. 38). Directors A-E often asked students to model (similarly reported by Cavitt 1998, Goolsby 1999). In rehearsals of directors of high-performing bands, questions were often about desired outcomes of the music and included questions that sought student opinion for solutions for error correction or musical interpretation. Directors L-P demonstrated only 10 questions over the course of 15 rehearsals that pertained to specific aspects of the music. Students were often asked about classroom rules and behavioral expectations.

Directors of high-performing bands spent less time correcting off-task behavior compared with Directors L-P who had more than six times the incidences of off-task student behaviors. This may be a result of less predictability and structure as seen in the rehearsals of directors of low-performing bands. Research informs educators that off-task student behaviors often occur when students are not engaged in structured, monitored activities (Nelson, Roberts & Smith, 1998; Lee, Sugai & Horner, 1999; Roberts et al., 2001). Specific to music education research, Brendell (1996) found that most off-task student behaviors in rehearsal occur during non-instructional time, as is corroborated by this current research. The larger amount of non-instructional time in rehearsals of directors of low-performing bands (26.75% of selected rehearsal frames versus 12.78%) may also contribute to the higher frequency of off-task student behaviors (10 frequencies for Directors A-E versus 67 for Directors L-P).

Teacher modeling in both groups of directors included more positive than negative modeling. Directors of high-performing bands devoted just under 9% of repertoire rehearsal time to modeling, slightly more than reported in previous research (Cavitt 1998, Worthy, 2003, 2006),

while directors of low-performing bands modeled only 2.18% of the time. The number of incidences of modeling for Directors A-E was more than four times that of Directors L-P, with positive to negative modeling represented with a ratio of 4.16:1 compared to 1.27:1. Of the 79 episodes of negative modeling for directors A-E, 68 were immediately followed by positive modeling; the directors seemed to use this method to show the contrast between the incorrect performance student performance trial and the desired outcome. Modeling by directors of high-performing bands included singing, singing while conducting, facial expressions, hand gestures, and body movements. Additionally, two of the directors played an instrument as a method of modeling (one director on his primary instrument and one director of a secondary instrument). It was also observed that for most melodic segments that were modeled, directors of high-performing bands sang on pitch in the key of the music. All five directors of high-performing bands used a metronome at some point in rehearsal, often during skill development/warm-up time, and for selected rehearsal frames of articulation, rhythm, and tempo. Four of the five directors often modeled during articulation, rhythm, and tempo target category frames using a metronome that sounded over the speaker system. Directors of low-performing bands used less variety of modeling methods and often did not follow negative modeling with positive modeling. On occasion, when directors of low-performing bands sang examples more than once, subsequent examples given by the director were performed differently from the initial example, possibly contributing to a lack of student comprehension or improved performance. Directors L-P were not observed using a metronome as a teaching tool. Contrary to the demeanor displayed by directors of high-performing bands, when delivering negative modeling, three of the five directors of low-performing bands intermittently modeled with some discernible level of condescension.

Time devoted to student performance was similar between the two groups of directors, showing a mean percentage of 43.17% of time for Directors A-E and 43.61% for Directors L-P. However, within the category of student performance, the use of full ensemble performance, section performance, and individual performance was quite different. Directors of high-performing bands placed time priority on section performance (42.34% of total student performance time) as was similarly reported by Cavitt (1998), above full ensemble performance (38.89%), with individual performance time demonstrated as half that of full ensemble (18.77%). Directors of low-performing ensembles devoted most time to full ensemble performance (51.08%), which was greater than 21.49% more time than individual performance which ranked second (29.59%), and section performance which ranked third (19.33%).

Directors A-E often utilized full ensemble performance during frames where the entire ensemble contributed to the success of the selected rehearsal frame target: dynamics, tempo, multiple targets (which often included dynamics with tempo and articulation), unidentified, and other. For directors of high-performing bands, the category of other was often defined by requests for the students to play a music segment with a greater level of expression without reference to dynamics or other target categories that are sometimes considered part of expression. The directors were observed offering analogies or imagery to promote higher achievement of the passage (i.e. “Remember that this part of the music represents a bicycle race in France. It needs to convey speed but lightness and exuberance”).

For directors of low-performing bands, most student performance trials were full ensemble performance in all target categories except tone/intonation. When directors indicated that they believed errors were occurring within sections of the band or by individuals, Directors L-P usually requested the full band play on the subsequent student performance trial, rather than

requesting section or individual performance. Similar to the observations of directors of high-performing bands, rehearsal frames devoted to the target category other by directors of low-performing bands were devoted to musical expression to some extent. Rather than using analogies or imagery to improve performance, the music segments were simply described as needing repeated trials; specific target categories were not named (i.e. “This just has to sound better. Let’s go through it again and think about making music”).

Directors L-P included section performance and individual performance selected rehearsal frames with less frequency and duration than did Directors A-E. Individual performance was used recurrently to hear students play one at a time in “chair order” for the purpose of correcting intonation issues or wrong notes. Often the directors of low-performing bands would state that intonation was not accurate, but rather than identifying the note(s) in question, students were requested to play their instrument’s tuning pitch in order for it to be checked with the tuner and not the note in question. As mentioned in reference to tuning during skill development/warm-up time, Directors L-P often told students how to adjust their instruments rather than stating if the note was sharp or flat. Once a section was “re-tuned” individually, the pitch in question was only occasionally then heard by the entire section (section performance) to evaluate achievement. Section performance usually demonstrated little to no change in the note(s) identified as being out of tune. In rehearsals of directors of low-performing bands, section performance was usually demonstrated as rehearsal segments where families of instruments, or specific instrument types, were asked to play (clarinets, trumpets, alto saxophones, etc.). Section performance time was rarely represented by various ranges of instruments or by instruments that were orchestrated to have the same part (instruments with the melody, instruments with chordal accompaniment, instruments with the same pitches, etc.).

Though not analyzed specifically in this study, the process of error correction only by like families of instruments seems to make it more difficult for identifying the student(s) error(s) and a more difficult process for creating a unified performance between and among performers who play like parts within the composition. In rehearsals of directors of low-performing bands, section or individual student performance trials often revealed severe performance issues that elicited behavioral shifts in the ensemble, often a sense of uneasiness and at times, uncomfortable laughter. Perhaps full ensemble performance trials make these poor levels of student performance less noticeable and therefore possibly increase full ensemble student performance trials as a way of avoiding uncomfortable performance moments. Evading the more difficult tasks of repertoire improvement should also be considered as reasons for increased full ensemble performance. Montemayor (2006) suggests that “a director might choose targets which avoid the most pressing matters of their ensemble’s performance on the piece at hand or their student’s performance skills in general” (p. 102).

Though Directors A-E did at times request to hear students play one at a time in “chair order” for the purpose of correcting intonation issues or wrong notes, this method did not represent the majority of individual performance time. Individual performance was often utilized to hear rehearsal targets in various categories. As similarly reported by Cavitt (1998), when using individual performance time, students were often told to match another student or the example modeled by the teacher. Directors of high-performing-bands often demonstrated section performance during student performance trials that represented various combinations of instruments, not necessarily families of like instruments, as representative of how the music was composed; instruments with similar parts were rehearsed simultaneously for the purpose of identifying errors or inconsistencies player to player. The decontextualization-remediation-

recontextualization process (Duke, 1994) may best describe how directors of high-performing bands utilized section performance and individual performance time, not only by isolating target categories, but also by rehearsing instrument groupings within the texture of the full ensemble. Larger phrases of music may have been best improved by breaking them into smaller elements as represented by section performers and individual performers (decontextualization). Once the smaller elements were improved (remediation), the phrase was “put back” together again (recontextualization), resulting in an improved overall segment of the music. Full ensemble performance often followed selected rehearsal frames that clearly used the decontextualization-remediation-recontextualization process.

Directors A-E used performance approximations 12.4 more times than Directors L-P, 207 incidences versus 14. The 207 performance approximations demonstrated by Directors A-E over the course of 15 rehearsals were represented by a mean frequency of 13.8 approximations per rehearsal. Directors A-E used singing and rhythm counting systems as part of performance approximations, as well as verbalizing articulations, mouthpiece buzzing, clapping, conducting, and valve clicking. Directors A-E demonstrated an effort to involve as many students as possible during most rehearsal segments where approximations were used. For example, if a rhythm error existed for only half of the band, all students were asked to clap, though the identified rhythm in question did not directly apply to them; a possible learning opportunity for all students, or a classroom management technique. Each time approximations were used, students of high-performing ensembles participated willingly and confidently, without hesitation. The observed success of performance approximations in rehearsals of high-performing bands may also add to the excellent classroom management, providing a change of activity and physical actions of the performers as these activities are often more vigorous than usual performance on instruments.

The efforts to involve as many students as possible may also add to the sense of group unity and accomplishment.

Directors M, N, O and P (Director L did not use approximations) were observed using performance approximations of rhythm clapping, articulation verbalizations, and signing. The 14 occurrences demonstrated by directors of low-performing bands represent less than one performance approximation per rehearsal. This lack of frequency may explain why students of Directors L-P appeared to be reticent and at times uncooperative during performance approximations. Each time performance approximations were utilized in rehearsals of Directors L-P, there was a marked difference in the rehearsal environment that the researcher would describe as uneasy or even stressful.

As discussed earlier in reference to teacher questions, student talk time during rehearsals of directors of high-performing bands was part of an interactive process of performance improvement during rehearsals. The students of directors of high-performing bands seemed unabashed when asking or answering questions. As previously discussed, Goolsby (1999) suggested a need for more interactive rehearsals where exchanges between director and students promoted higher levels of cognition about those elements of music and music making that go beyond correct notes and rhythms. Though directors A-E demonstrated much more student talk time during the repertoire rehearsal process with a mean frequency of 6.87 per rehearsal (103 total frequency), this seems to reflect an amount that is less than what could be considered optimal. Question and answer exchanges were sometimes about overt themes of the music (expression, orchestrational aspects, and musical intent) and not just specific areas of error correction. Student questions for directors of low-performing bands were often requests for the director to model a rhythm, model a fingering, or explain markings within the music. Of 40

student talk episodes, 29 incidences during rehearsals of Directors L-P were in response to directors' questions regarding classroom rules or behavioral expectations, or when rehearsal was paused due to student off-task talking.

Marking music during rehearsals can play an important role in the retention of corrected or improved rehearsal target categories within the music. Directors A-E demonstrated 6.57 times more time devoted to student's marking music than Directors L-P, with half the mean duration. During rehearsals of high-performing bands, students often demonstrated music marking behaviors on their own. When directors of high-performing bands requested students to mark their music, it was for specific elements within the music. Instructions included what students were to write, specifically. Directors A-E paused rehearsal to allow students to mark their music. It was observed by the researcher that all students participated when asked to do so; each having a functioning pencil in rehearsal. Directors A, B, D, and E were each observed asking students to hold their pencils in the air with the writing tip up. This seemed to be a common occurrence as students quickly complied, though seemingly not because of apprehension of punitive reactions from the director but rather as a common classroom occurrence. Marking music in rehearsals of directors of low-performing bands occurred much less often than in rehearsals of directors of high-performing bands. Though requested to do so, students often did not mark their music. Request for marking music by Directors L-P often included non-specific elements of the music, reflected by requests for students to write general reminders such as "watch" or "play lightly."

Analysis of the teacher and student behaviors within selected rehearsal frames by matched pairs of directors reveals an overt diversity of what happens within the details of repertoire rehearsal. More than 1,000 points of data were compared between the directors in each pair. This level of detail includes all behaviors demonstrated within each frame and specifically,

within each target category. The mean number of similar data points between both directors of each matched pair was 32. This number indicates that the two directors in each pair share only approximately 3% of the same specific behaviors when rehearsing their respective ensembles. When analyzing data points that were comparable, beyond the similarities already discussed in this study, no discernable pattern of methodology that may explain the similarities was evident.

The fourth research question asked:

What conducting behaviors are shared and are different between and among directors of high-performing and low-performing high school bands? How do these behaviors compare between matched pairs of directors who share comparable, years of experience, professional backgrounds, and teaching environments?

CONDUCTING BEHAVIORS: FINDINGS BETWEEN AND AMONG DIRECTORS OF HIGH-PERFORMING AND LOW-PERFORMING BANDS AND MATCHED PAIRS OF DIRECTORS

Five expert university wind conductors analyzed the conducting of all ten participants. Eight specific categories of conducting elements were evaluated resulting in a conducting score for each director out of 200 possible points. Conducting scores for directors of high-performing bands revealed a mean score of 167.2 while directors of low-performing bands revealed a mean score of 137.6. The four highest scores were demonstrated by directors of high-performing bands while the four lowest scores were demonstrated by directors of low-performing bands. Though the highest two scores and lowest two scores were more than 50 points apart, the middle six directors demonstrated a mean score of 155, with a standard deviation of 10.6, suggesting a similar level of conducting ability. An analysis of score rank shows no discernable correlation

based on director age, education, or experience, matched pairs of directors revealed only few similarities. Directors D and O, the second youngest matched pair, each with eight years of experience, recorded scores ranked in the top five. The youngest directors, E and P, each with five years of experience, placed in the bottom five scores, ranked 6th and 7th respectively. While there is previous research that suggests that good conducting has a positive affect on student performance (Sidoti, 1990; Price & Winter, 1991), there are also compelling studies that indicate no correlation between conducting quality and student performance (Price & Chang, 2005; Price 2006). Data of this current study do indicate that directors of high-performing bands possess greater conducting skill levels than directors of low-performing bands.

The fifth research question asked:

What non-rehearsal attributes (age, experience, education, teaching environment, philosophy, etc.) which may contribute to teaching quality, performance quality, and conducting behaviors, are different and shared between and among directors of high-performing and low-performing high school bands? How do these attributes compare between matched pairs of directors who share comparable years of experience, professional backgrounds, and teaching environments?

NON-REHEARSAL ATTRIBUTES:
FINDINGS BETWEEN AND AMONG DIRECTORS OF HIGH-PERFORMING
AND LOW-PERFORMING BANDS AND MATCHED PAIRS OF DIRECTORS

Those working in the field of high school band directing, as well as university students studying to become band directors, often discuss the factors that contribute to a quality band program. These often include: wealth of the school district, administrative support, booster support, a long tradition of excellence, facilities and equipment, number of directors, number of

staff members, and percentage of students taking private lessons. Quality of instruction is often mentioned, but perhaps not as readily as some of the aforementioned elements. These factors were considered during the design of this research as to diminish or delimit consideration of their affect on the student achievement levels of each program; it was the intent of the researcher to focus primarily on the behaviors of the directors. Though always a part of the education milieu, current education canons have exponentially turned evaluative focus toward the quality of teaching pedagogy as measured by student performance outcomes. The philosophy that all students can achieve at a high level drives education research, development, and debate. Though certain factors of various band programs may produce limiting, if not difficult obstacles for reaching certain prescribed levels of student success, the fact remains that “teachers still choose the scope of the moment-to-moment tasks that students are to accomplish, regardless of the overall difficulty of the project, and are thus responsible for the interim achievement of their students” (Duke 2005, p. 133). Though various contributing factors aid in the development of a well-educated student, we rightly should focus on what is seemingly the most malleable and common factor for all learners in all environments, the teacher.

The non-rehearsal attributes of each director’s professional background and teaching environment were carefully examined as a method for excluding many elements that band directors and future band directors associate with band programs that produce consistently high-performing bands from being the variables that most contributed to high-level student performance. Placing directors of high-performing bands and directors of low-performing bands in matched pairs based on shared similar years of experience, professional backgrounds and teaching environments, created a scenario where behaviors could be more justly compared. For

each director whose band was determined to be low-performing, a director with extremely similar professional circumstances was producing a high-performing band.

THE INTERVIEWS

Though all participants were placed into a category of either directing a high-performing or low-performing band, and in matched pairs (shown in Chapter 3) as to create participant homogeneity, the interview process revealed the most detail of each director as an independently thinking and acting educator. Although explicit music curricula exist for most school districts' music programs, many directors have yet to implement these guidelines as they are often viewed as restrictive and impractical. Therefore, each director decides primarily what is taught in the music classroom. As an integral part of his 2009 study, Snead suggests that whether following strict course guidelines or not, most important curriculum decisions are reflective of the musician-educator themselves. Analysis of the answers to eight interview questions helped paint a more detailed portrait of each director as an individual. The directors' responses to these questions also further revealed distinct commonalities among directors of high-performing and low-performing bands, and distinct differences between each matched pair of directors.

Interview Question 1. *What methods and materials do you use to prepare for each rehearsal? (rehearsal videos, audio recordings, lesson plans, score study, etc.)*

Of the five directors of high-performing bands, each stated that they made audio recordings of rehearsals, often listening to them on the way home from school or on the way to work the next school day. Four said that the daily audio recordings account for the majority of their rehearsal planning for the week(s) ahead. Three directors indicated that they videotaped rehearsals on a regular basis with Director C stating that he videotaped once a week as part of class requirements for the graduate curriculum in which he was currently enrolled. Several directors indicated that rehearsal plans were done a week or more in advance to, as Director D described, “map-out” expected dates for reaching specific performance goals and to implement necessary skill-building activities as needed to reach those goals. Directors A and E said that their scores were marked with great detail and that they followed a written plan that allowed them to first address those elements of the music that would take the longest time to master, though leaving room in rehearsal for rehearsing more easily attainable passages to create variety in the rehearsal. Director A stated that he often assessed fundamental skill levels in August, in order to plan the entire year’s curriculum, including concert repertoire. Each director expressed their overt efforts to be organized ahead of time with materials, music copies, sight-reading music, music folders, and electronic equipment needed for each rehearsal.

Directors of low-performing bands reported less class preparation. Only Director P used audio or videotape as part of performance critique or self-evaluation. Directors L, M, N, and O indicated that their respective schools required written lesson plans to be submitted monthly or weekly to a principal or department coordinator. Directors L, M, and O stated that their lesson plans were completed with some level of detail, but that they rarely followed the plans. Director O and P stated that they regularly listened to “professional” recordings of their concert repertoire

in order to prepare for rehearsals. Director M and Director N stated that the repertoire was easy enough that detailed score study or preparation was not necessary.

Interview Question 2. Describe your consumption of and participation in music activities outside of your school-related responsibilities.

Directors A, C, and D reported that they each play their instrument on a regular basis. Two directors perform in church ensembles and one in a community band. Directors B and E stated that while they play their instruments in formal settings occasionally, both commented that they do perform weekly in non-band venues. Director B sings in his church choir and Director E sings in a competitive barbershop quartet. Director B models on his primary instrument during rehearsal each day, as does Director E on a secondary instrument. Each director of high-performing bands discussed being consumers of various types of music. Each stated that instrumental art music was one of the genres they listened to the most. The instrumental music includes compositions that most of them program for their respective high school bands. A comment by Director C reflects a common point made by four of the five directors: "Hearing live music, including performances by professional groups, ensembles at conventions, and at local universities, is a necessary part of feeding my musical soul. I come back to my students a happier, often rejuvenated music educator."

Four of the directors of low-performing bands talked about their interests in several types of music outside of concert band literature. Directors L and O stated that getting away from the music they teach is a necessary part of not getting "burned out." Director L further stated that he could not remember the last time he played or listened to music for enjoyment because of his busy life. Director O stated he recently joined a community band, performing on a secondary

instrument. Directors M and N stated while they do listen to a wide variety of music, they no longer perform on their instruments nor attend concerts. Director P revealed that he sometimes plays his primary instrument when helping the middle school director with beginning students. Director N revealed his love for classic rock music, stating that he played electric guitar on a regular basis and often performed publicly.

Interview Question 3. Describe your involvement in local, state, and national music teacher organizations, activities, conventions, camps, symposiums, workshops, etc.

Among directors A-E, two were holding office in local music teacher organizations and Director C was holding a state-level office. Director A stated that though attending conventions had become more difficult as his children had entered school-age, doing such was vital to his sense of belonging to a larger community of people that felt as he did about his professionalism. Directors C and D replied that they teach at least one summer band camp for a university, both further adding that like attending conventions and workshops, doing so helped them keep in touch with their professional colleagues. Director E stated that he spends his summers teaching a drum and bugle corps, adding that he feels it gives him great additional teaching experience and daily interaction with other successful music educators. Each of the five directors stated that they attend at least one music convention a year.

Only Directors M and P stated that they actively participate as part of a music teacher organization. Director P stated that he planned to attend a conducting symposium to be held in June at his college alma mater. Directors L, N and O each stated that they felt that convention or workshop attendance was no longer valuable to them as band directors.

Interview Question 4. *What is your level of expectation for the performance quality of your premiere ensemble?*

Directors of high-performing bands seemed unified in their approach to answering this question. Though Director A and E discussed their desire to receive the highest ratings possible at contest, each director also described their performance-level expectation as that of one of distinction regardless of contest ratings. Students were expected to perform the selected pieces as well as each could be played. Director E mentioned that his ensemble was expected to perform the music as well as a high school band could play each piece, perhaps inferring a different level of performance than would be demonstrated by a university or professional-level performance. Directors A and C offered that they felt their expectation for performance was based on a national scale of how great high school bands perform. Director D suggested that the selection of repertoire was inseparable from the knowledge of each student's abilities and potential for individual musical growth through the experiences of rehearsing the selected repertoire. He further explained that a high level of expectation of performance is a yearly "renewable" benchmark with the only variable from year to year being the selection of repertoire, not student talent level. Director C offered that though he would discourage the use of the word *perfection* because of its possible non-musical connotation, it perhaps best defines what is expected. He confidently added, "I have learned that with most students, you get what you ask for."

Directors of low-performing bands were less unified with their responses to this question. Director M stated that the most important expectation of the performance was that students were comfortable enough with the music to focus on its musical value to the audience. Directors N and O shared that the band members usually do the best they can and that doing so was "all that could be asked of them", both perhaps suggesting that the actions of their students best define the

level of teacher expectation. Directors L and P similarly expressed that it was important that their respective ensembles play well, but the level to which a director pushes performance expectations should constantly be weighed against student reactions. That is, pushing too hard may cause students to leave the program.

Interview Question 5. Are you aware of what music education research tells us about the most effective way to rehearse bands?

Analysis of answers to this question indicated a clear trend, suggesting a causal relationship to a dependent factor. Among all ten band directors, the oldest were the least familiar with music education research findings and the youngest were the most aware. Directors A and L both stated that research suggests that positive feedback is extremely important and should be given much more than negative feedback. This is not what each demonstrated during their respective three days of rehearsal. Observation research of expert band directors shows that frequency of negative feedback outnumbered positive feedback by as much as double (Cavitt 1998, Worthy 2003, 2006). Directors B and M said that research indicates that bands should play music written for winds and not orchestral transcriptions. Each remaining director offered some version of most of the following answers:

- Directors should talk less and let the students play more.
- Activities should change often to help pacing.
- Involving students in decision-making helps retention.
- Teaching fundamentals is important to student success.
- Directors should not over-program for contest.

Both Directors E and P offered a substantial number of additional answers. This may be because both are the youngest participants, having earned their Bachelor degree just five years prior. These findings for the youngest directors may also suggest that universities are increasing their inclusion of research findings in the curriculum of music teacher education.

Interview Question 6. Considering your current teaching resources and teaching environment, what improvements would you like to see that you feel would positively affect the quality of student performance? What do you feel are the solutions?

Overall, answers for directors of high-performing bands were brief. Director A suggested that he was pleased with the program and would want to see little changed. He indicated that efforts were being made to increase the number of students taking private lessons and that band boosters were working to create an endowed fund to support this effort. Directors B and C mentioned that they were working to better “share” students with other activity sponsors in a way that does not discourage their students but also does not diminish the quality of the band nor the experiences of students that participate in multiple organizations. Director D expressed wanting to increase funding for various reasons, but primarily for the purchase of needed instruments. Director E stated that he wanted to begin fundraising for new uniforms and that he wanted to increase retention from the middle school, giving possible strategies for doing so. Directors B, D, and E stated they had more to learn and were constantly seeking information that would strengthen their pedagogy.

Most directors of low-performing bands spent more time answering this question than the other seven questions. Though Director M and P discussed a need for better equipment and higher budgets, most answers from Directors L-P involved student and administration behaviors

that they felt were a weakness of their current jobs. Directors N, O and P talked about a lack of support from campus administrators. Director N further offered that the district in general did not value the arts as much as they should and that his budget was too small to add to the success of the program. Director N suggested that his band would only play better if more students would take private lessons. Director P spent a lot of time talking about the students not wanting what he wanted, that they were too immature to recognize the value of what he was trying to do. Other than Director P stating that he wanted to improve his conducting, directors of low-performing bands often spoke of improvements that did not have specific diagnoses or readily available solutions. Specific strategies for improvement were not mentioned.

For answers to the following question, I will present each participant's answer in paraphrase as succinctly and accurately as possible; several directors spoke longest in response to this question. Each director was asked for their approval of the paraphrased answers.

Interview question 7. *What is your philosophy of music education/ band education?*

DIRECTORS A-E

Director A: Music is part of what it means to be human. Music is part of what it means to be creative, alive, and inspiring. It can define us to a great extent. Studying it has positively influenced my life. I want to pass that along.

Director B: Band belongs in our public schools as a way of learning and experiencing music for music's sake. It's an expression linked only to the human species and therefore worthy of study.

Director C: Though we talk about all the extra things that band can do for our students, I feel it is a uniquely American part of our schools that primarily teaches self-expression through sound in a group environment. “That’s pretty special.”

Directors D: Band can be many things for many different students. I do not expect my students to favor band over everything they do, but I do expect participation to be part of filling some gaps of who they are as individuals in a way that is fun and intelligent, something that can affect all of us in an irreplaceable way.

Director E: Music is “so cool.” Society shows us that “in spades” by how much music is in everything, everywhere. I want to somehow be a part of all of it, guiding their choices somewhat but also educating them on how to explore how special music is for themselves, for the rest of their lives.

DIRECTORS L-P

Director L: The music classroom is the best place to learn social skills and teamwork. It is an important way of giving students something positive to do.

Director M: Music teaches students that hard work does pay off. Band, specifically, is a great activity for helping students to feel a part of something interesting and fun.

Director N: Band is important because it gives students a safe place to be. “I want my students to feel like the band room is home away from home.”

Director O: Music has meant a lot to me. It is important to teach music and performance in our schools because it teaches about reaching goals individually and as a group.

Director P: We all need to learn how to stick with something, work as a team, and show others the results of our efforts. Band is the best way I know to do that.

Though being careful to not interpret each director's answer beyond what is presented here, it is interesting and important to point out an emergent theme represented by each group of directors. Directors of high-performing bands seemed to extol music education/band education as worthy of study because of its unique role to humankind, a curriculum of study that has no real equal, a study that can transcend other experiences. Directors of low-performing bands seem to represent a view that promotes music education/band education as being more pragmatic, functioning in a way that many other activities can function, providing worthy outcomes, but perhaps outcomes that many other public school activities can provide. As similarly reported by Gonzales (2001) and Snead (2009), it should be considered that a director's philosophy of music education plays an integral role in the overall planning of and rehearsal behaviors present in all music education classrooms.

Interview Question 8. *Is there anything about yourself or your program you would like to share that has not been covered?*

Answers from Directors A-E were interesting in that each were not about their respective programs or pedagogy *per se*, but about wanting to offer something they felt that would perhaps aid both future and current music educators. Director C contended that though band directing was a difficult job, he hoped his passion was evident in his rehearsals and that music educators often forget how much fun great music making can be. After assuring me how hard his students

worked, Director D revealed that he had learned that quality comes with patience. He went on to state further that his students were now “on the same page” with him, but that they were not six years prior when he became the director. Director E stated that he knew from research that year five was typically the point at which many music educators would leave the profession. He assured he would not be part of that statistic.

Director N and O did not offer additional information. Directors L and M went back to question 6 (see page 163), expanding their answers for what they perceived to be needed improvements from students and administrators. Director P spoke at length about wanting to build a successful program and that he felt he had made important strides over the past five years. He additionally talked about how eager he was to use the training he received in his university music education program, and how he had great college directors that he considered his mentors.

Analysis of answers to the interview questions revealed that matched pairs of directors responded extremely dissimilarly. Beyond the requirements that matched each pair, as demonstrated throughout the results chapter and discussion, there were few behavioral commonalities between the matched pairs of directors.

Research question six asked:

What skill development/warm-up, sight-reading, and repertoire materials are used between and among directors of high-performing and low-performing high school bands?

REHEARSAL MATERIALS:
FINDINGS BETWEEN AND AMONG DIRECTORS
OF HIGH-PERFORMING AND LOW-PERFORMING BANDS
AND BETWEEN MATCHED PAIRS

All five directors of high-performing bands used published instrumental ensemble books as part of skill development/warm-up time. Scales were played in at least two of the three rehearsals of each director. All twelve major scales were played each day in the rehearsals of Directors A, C, and E (from memory in rehearsals of Directors A and C). Directors B and D used scale playing as part of skill development/warm-up each day, concentrating on keys related to the repertoire music and sight-reading selections. Directors A-E each used chorales as an integral part of skill development/warm-up time. Most chorales used were by Bach, arranged for winds in various keys. Additional materials were used in the rehearsals of Directors A, C and E. Directors A and E both used rhythm sheets that utilized a time signature of 6/8 as both had their respective ensembles sight-read a piece that was all or in part composed in 6/8 time. Directors C and E used an articulation sheet each day. Director B utilized a multiple tonguing sheet each day.

Directors A-E used eleven sight-reading pieces over the three days of rehearsal. Pieces ranged in difficulty level of 3—5. Procedures for sight-reading were different between Directors A-E. Directors A and C demonstrated similar methods, which included a brief period where each director pointed out important compositional aspects of the piece. Directors B, D and E demonstrated a similar method of discussing the sight-reading selection to the students, but with less detail. Of the eleven pieces selected for sight-reading, five were marches and six were overture-like pieces that used an A-B-A form.

Directors A-E selected fifteen pieces of music as their concert repertoire (three per school). Because marches are not typically graded, the two remaining concert selections were used to determine the difficulty level of each director's concert repertoire. Director A programmed a selection graded as level 5 music (difficulty level 5) and one piece graded level 6,

for a programmed level of 11. Directors C programmed a level of 10 and Director D programmed a difficulty level of 9. Director B, at a smaller school than Directors A and C, programmed a difficulty level of 6, and Director E at the smallest school, programmed a difficulty level of 7. The mean difficulty level for Directors A-E was 8.6. Including the marches selected for performance, composers represented in the 15 selections have an international level of recognition in all areas of music performance. These composers include Ralph Vaughn Williams, John Phillip Sousa, Karl King, Percy Grainger, Darius Milhaud, Norman Dello Joio, Morten Lauridsen, Camille Saint-Saëns, and Giuseppe Verdi.

Directors L and P each used skill books each day. Director M used the same book as Director L, but only on one of the three days of rehearsal. Directors N and O did not use any published or supplemental materials on any of the three days of rehearsal. Scales were played each day in rehearsals of Directors L, P, and M. All twelve major scales were played each day in the rehearsals of Director P. Director L rehearsed the B-flat major, F major, and E-flat major scales each day, using different rhythmic patterns. Directors M played the B-flat major scale each day using a slur-tongue pattern. Directors L and M used the same chord progressions (not a chorale) every day near the end of skill development/warm-up time, arranged in B-flat major. Director P used a different chorale each of the three days, each by Bach. Directors N and O did not use chorales. Additional materials were used only in the rehearsals of Director P. Directors P additionally used an articulation sheet each day.

For Directors L-P, only Director P used sight-reading during any of the three days of observed rehearsal. Procedures for sight-reading were similar to those demonstrated by Directors B, D, and E. Director P often pointed out certain aspects of the music while the band sight-read each piece. Directors L and O programmed a difficulty rating of 6. Directors M and N each

programmed a difficulty level of 7. Director P, at the smallest school, also programmed a difficulty level 7. The mean difficulty level for Directors L-P was 6.6 compared with 8.6 for Directors A-E. Only two of the ten pieces also appear on at least three of the standard or “core” repertoire list published by the leading expert directors in the field of instrumental music (Appendix E, F, G). Including the marches selected for performance, only one composer represented by the 15 selections has an international level of recognition in all areas of music performance, Vincent Persichetti. One composer is recognized widely in instrumental performance arenas, Frank Ticheli. Both of these composers were represented by the concert repertoire of one of the five directors of low-performing bands, Director P.

The use of material other than concert repertoire is necessary as a part of building fundamental skills for developing band members. With performance of concert repertoire being the primary goal of most concert band rehearsals, the incisive planning and artful application of fundamentals, as reflective of requirements within concert repertoire to be rehearsed and ultimately performed, seems logical. However, this research shows that most directors of low-performing bands used skill books, chorales, scales, rhythm sheets, and articulation studies with little consistency over a much shorter period of time than did directors of high-performing bands. The lack of strong fundamental playing was reflected in the initial evaluation of submitted tapes that qualified each participant as a director of a high-performing or low-performing band. It can be said that the quality and amount of fundamental training a band receives directly affects the level of performance. Additionally, strong fundamentals that lead to advancing techniques contribute to the amount of and level of literature that can be successfully programmed. Current canons within instrumental music education, particularly band music education laud repertoire as curriculum.

A presentation at the 2009 Midwest Clinic (a large national convention for musicians and music educators), Dr. Brian Cardany and Dr. Paul Cummings presented the most recent scholarly effort to identify the “core” repertoire for high school band (expertly composed pieces and seminal works). The presentation demonstrated great effort to represent all lists of core repertoire that had been compiled by those who are leaders in the band directing profession and have shown a scholarly approach to its justification and completeness. This topic has garnered attention in the band directing profession since the 1960s, showing exponential interest over the past two decades. In the interest of bringing more consensus among band directors and band musicians for what we define as the best quality literature, H. Robert Reynolds has shown great leadership as exemplified by his statement, “As music educators, our primary purpose is to help individual students receive a music education through experiences and information. In order to achieve this lofty goal, we must strive to select the finest repertoire, for only through immersion in music of lasting quality can we engage in aesthetic experiences of breadth and depth” (p. 31). This ideal is often reflective of music educators using the repertoire we choose for our students to rehearse and perform much like other thoughtful, expert, guiding educators select books to teach their curricula (repertoire as curriculum). Literature of depth and best methods for mentoring the students we teach perpetuates the ongoing discussion of repertoire as curriculum. Though state-level approved music lists and independent band contest lists (those pieces from which competing band directors must choose in order to participate) contain music that is not considered “core” repertoire, each list additionally includes many, if not the majority of pieces listed, compositions that are considered to be of the highest quality. Directors of high-performing bands in this study all programmed music from the “core” repertoire. The reasons could be numerous including exposure to this music as high school and/or university students, or as

ongoing consumers of instrumental music. Because of each director's involvement with local, state, and national music teacher associations, it would be unlikely for these directors to remain uninformed about philosophies and actions surrounding the development and recognition of a "core" band repertoire. Other than Director P, directors of low-performing bands in this study did not program music from the currently established "core" repertoire for wind ensemble. Though reasons can be speculated, it is perhaps best to conclude that inquiry to the reasons should be proposed as future research.

TEACHING MUSICIANSHIP

When studying expert teaching in the music education classroom, we must consider the many possible expected outcomes of the instruction. However, long lists of specific and non-specific outcomes can often cause music education philosophies and goals to become diluted or misinterpreted. It is vital that practitioners and researchers constantly evaluate and explicate what is most important among our intended outcomes. One of the primary performance outcomes of music education should be the development of student performance that transcends the acquisition of knowledge and becomes the demonstration of skillful musical interpretation: musicianship. When considering the expertise demonstrated by directors of high-performing bands, I would offer that consideration be given for seeing these experts as *musician* educators and not merely *music* educators. Expert band directors should be expert musicians, teachers who know musicianship and can therefore teach musicianship. The conducting evaluations of directors of high-performing bands indicated that they physically demonstrate more musical interpretation through gesture/body language than directors of low-performing bands. Interviews

indicated that directors of high performing bands are more active music makers and consumers of art music. Four of the five directors of high performing bands spoke of their musicianship as linked unequivocally to their musical experiences as performers in their respective university's top ensembles. Interview questions regarding repertoire selection indicated that expert band directors were insistent about using the highest quality music to teach musicianship. Observation by the researcher revealed overt teaching traits of all five directors of high-performing bands that included the persistent development not only of technically accurate performances, but music-making that was emotionally influenced, based on the exploration of students' self-expression and a synergistic effort of the entire ensemble to share an aesthetic, visceral experience. All of these factors should further inform us as to how best to prepare future music educators. In addition to the specific course work of music theory, history, and teaching pedagogy, the development of expert musicianship in music education students is necessary to prepare them to teach musicianship expertly. Though there are perhaps various levels of musicianship, as an expert literature teacher should possess literature knowledge at the greatest level possible, an expert musician educator should possess musicianship at the greatest level possible. Music education students should develop expert musicianship on their instrument, preparing them thoroughly to teach and inspire musicianship; the acquisition of knowledge of music theory and teaching pedagogy should be built upon the inspiration developed through personal musical experiences. A veteran of the New York Philharmonic once said about Leonard Bernstein, "When he gets up on the podium, he makes me remember why I wanted to become a musician" (Gutmann, p. 1). Bernstein stated, "I want to keep on trying to be, in the full sense of that wonderful word, a musician. I also want to teach" (Gutmann, p. 1).

A UNIQUE POINT OF INTEREST

As this research progressed, it became increasingly evident that Director P should become a point of discussion. Director P, one of the five directors of low-performing bands, at times, demonstrated behaviors most associated with Directors A-E. Use of total allotted class time, time devoted to sight-reading, target priority by time proportion, frequency of frame and student performance trials per selected rehearsal frame categories, programming of “core” repertoire, and conducting skill each were areas where behavior was much more similar to directors A-E than directors L-O. Of each matched pair of directors, Directors E and P, the youngest and least experienced directors of all participants, showed the greatest amount of similar behaviors. As with the majority of comparative analysis in this research between Directors A-E and L-P, though Director P shared some distinguishable commonalities with Directors A-E, it is the layers of behavioral analysis that exist within the larger categories of rehearsal activities where the rate of common behaviors with directors of high-performing bands declines considerably. Though occasional common points of data were found within a more detailed stratum of analysis that corresponded with behaviors of directors of high-performing bands, and at times Director E specifically, these commonalities seem to be strictly coincidental.

For Director P, rehearsal pace, teacher talk, student performance, off-task student behaviors, modeling, and feedback within each selected rehearsal frame explicitly resembled the behaviors of directors of low-performing bands. Details of how to teach within target categories and not simply what targets to teach seem to represent a layer of detail that has perhaps yet to be realized by Director P in a way that would produce greater levels of student performance.

Additionally, the researcher's overall impressions of the rehearsals of Director P during the three days of data collection warrant consideration.

Music education in the area of teacher magnitude/intensity gained significant interest in the 1980s (Yarbrough, 1975; Byo, 1989; Madsen & Garringer, 1989; Madsen, Standley & Cassidy, 1989; Cassidy, 1990), resulting in numerous studies being published for more than a decade. These studies eventually concluded that student performance and conducting/teaching intensity did not have a predictive causal relationship, neither did these studies conclude that teacher personality or motivation do not affect performance outcomes. They more suggest that there is not one prescribed teacher personality or teaching delivery style that produces high-performing students. The researcher's general impressions of rehearsals of Director P were that "something" was missing. There seemed to be a palpable disconnect between teacher and students. In 1970, Jacob Kounin created a term to describe a teacher's ability to know and connect simultaneously to everything about his students in the classroom environment: *withitness* (with-it-ness). Though the term *withitness* was initially used most in reference to classroom management, the term's definition and application within the education field has expanded to encompass all teacher assessments of and reactions to the ever-changing classroom environment. Wolfgang (2001) describes *withitness* as an "overt awareness to [all] goings on in a classroom" (p. 213). In reference to gaining *withitness*, Schon (1991) stated that, "It takes practice, and more practice. It also takes commitment, and more commitment to teach and reflect at the same time" (p. 343). Schon seems to suggest that *withitness* can be acquired over time. Stephens and Crawley (2002) advocate that it is best to understand *withitness* "...more for its purposeful, rapport-generating qualities" (p. 91). Director P stated during the interview that teaching as he was taught to teach and as demonstrated by his mentors was important to him. He

seemed to do many things that music teacher education has consistently prescribed for successful band directing, perhaps demonstrating teaching behaviors and strategies as he was taught. It is plausible that the identification and execution of expertise level details of rehearsal are not currently part of music teacher education and that unless a teacher is or becomes overtly intuitive/reflexive, expert teaching may not be realized. If *withitness* is the missing “ingredient,” can it be developed? Does it require intense efforts of practice, commitment, and reflection as Schon suggests (1990, p. 343)? If so, how are these efforts defined and how are they subsequently measured? When does a less successful director know he or she is approaching the acquisition of *withitness*?

Perhaps it is Directors P’s philosophy of music education that plays the biggest role in knowing what specific changes to begin to prescribe if elevated student music performance outcomes are the goal: “*We all need to learn how to stick with something, work as a team, and show others the results of our efforts. Band is the best way I know to do that,*” Director P. Though these are noble goals for any activity in which students participate, they are not unique to music and do not address the learning, experiencing, or performing of music at a high level.

RESEARCH RESULTS SUMMARY

Directors of high-performing bands demonstrated rehearsal behaviors that were consistent, predictable, extremely organized, efficient, and fast-paced. Attention to skill fundamentals, performance details, and student achievement was evident in the high levels of student outcomes consistently demonstrated while performing repertoire selected from the best available band literature. As previously described by Worthy (2006), these directors might best

be described as "...having high expectations for musical [outcomes]..." demonstrated through "...persistence in pursuit of improved performance" (p. 60). Students were always on-task while involved in interactive rehearsals, often demonstrating independent behaviors that positively contributed to each rehearsal. Though varying in years of experience from only 5 years to 23 years, each director of a high-performing band demonstrated behaviors and outcomes associated with directors who are described in previous studies as experts (Goolsby, 1996, 1997, 1999; Cavitt, 1998; Worthy, 2003, 2006). Though demonstrating some behaviors similar to those of directors of high-performing bands, directors of low-performing bands led rehearsals that were largely unpredictable, often disorganized, and inefficient. Comparative analysis within the more detailed layers of rehearsals revealed that directors of low-performing bands demonstrated few behaviors in common with directors of high-performing bands.

Directors of high-performing bands spent nearly one fourth more class time on skill development and seven times more of rehearsal on sight-reading. Directors of low-performing bands spent twice as much time in non-instructional activities than did directors of high-performing bands (26.75% of class time compared to 12.78%). The faster pace of rehearsal for directors of high-performing bands allowed for approximately one more student performance trial per minute than for directors of low-performing bands, with Directors A-E often repeating corrected students trials whereas Directors L-P did not repeat corrected trials. Despite spending the majority of repertoire rehearsal time on the same six rehearsal targets, concert-recording evaluations indicated that these six targets were performance strengths for bands of Directors A-E and weaknesses for bands of Directors L-P.

Directors of high-performing bands spent 53.23% of repertoire rehearsal in student behaviors and 47.92% in teacher behaviors. Directors of low-performing bands demonstrated

priority to teacher behaviors with 53.60% and 46.64% to student behaviors. Both groups demonstrated more negative feedback than positive, though the use and types of negative and positive feedback varied greatly. Directors A-E utilized specific feedback with suggested techniques for correction much more often than Directors L-P.

The number of incidences of modeling for directors of high-performing bands was four times that of directors of low-performing bands with positive modeling to negative modeling represented by a ratio of 4.16:1 compared to 1.27:1. Over three days of rehearsal (15 total rehearsals), Directors A-E demonstrated a much higher frequency of performance approximations with 207 versus only 14 for Directors L-P.

Directors of high-performing bands were evaluated by expert wind conductors as possessing a higher level of conducting skill than directors of low-performing bands. Directors A-E used skill books and supplemental materials more than directors of low-performing bands and utilized established core repertoire for music curriculum whereas directors of low-performing bands largely did not. Directors of high-performing bands used a greater variety of teaching techniques including the use of a metronome, tuning CDs, singing, student modeling, and imagery for eliciting better musical understanding.

Interviews revealed Directors A-E to be more active participants in music education associations, summer camps, and workshops. Each additionally participated more often in music making as adult performers compared to Directors L-P. Directors of high-performing bands had specific goals and plans for program improvement. Directors of low-performing bands did not have specific plans for program improvement and spent considerable time identifying any program weaknesses as being the result of school, community, or student attitudes.

Possibly most responsible for the demonstrated teaching tenacity and high level of student outcomes, directors of high-performing bands revealed similar performance expectations for their students and comparable philosophies of music education that extol the study of music as being important for music's sake, as a uniquely human experience, unmatched by all other curricula. Conversely, directors of low-performing bands revealed lower expectations for student performance and expressed a philosophy of music education that was largely pragmatic, sharing that participation in band provides students with ways to develop team work, discipline, work ethic – all extremely valuable skills, but the same skills that can be gained from any number of activities in and outside of the school environment. Matched pairs of directors showed few behavioral similarities in all analysis categories.

Results of this study affirms previous research that suggests that expertise in band directing is best recognized when analyzing teacher behaviors that result in high level student performance outcomes. Though years of experience and skill development are needed to develop expertise, defining experts by years of experience is insufficient (Madsen & Standley, 1991; Shanteau, 1992; Allen & Casbergue 1997, 2000; Gonzales, 2001; Bergee, 2005). Through the comparative analysis of many specific behaviors of all ten participants represented in this study, this research is perhaps most concisely summarized by stating that for each director whose band was determined to be low-performing, a director with extremely similar professional circumstances was producing a high-performing band.

QUESTIONS RECOMMENDED FOR FUTURE RESEARCH

1. What are the behaviors shared between and among directors of high-performing bands versus directors of low-performing bands during different times of the school year, including the first two weeks of rehearsing concert/contest repertoire?
2. What are the behaviors among and between band directors with similar professional backgrounds and teaching environments in schools of close proximity, where local attitudes, social commonalities, traditions, racial demographics, and histories are most similar, including urban/inner-city programs?
3. What are the behaviors among and between band directors with similar professional backgrounds and teaching environments in schools that represent largely under-served populations?
4. How are the terms *novice* and *expert* each applied to individual directors within the band directing profession as largely defined by contest ratings of bands of directors of various ages and years of experience?
5. What are the relationships between band director philosophies of music education and the consistencies of quality performance levels demonstrated by their students?
6. Is there a relationship between skill development/warm-up materials, time spent rehearsing these materials, and demonstrated levels of student performance of skill fundamentals, with achievement levels of student repertoire performance?
7. How can music education better understand and measure teacher/student rapport (*withitness*) and its effects on student outcomes?

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LIST OF APPENDICES

APPENDIX A

4

UNIVERSITY INTERSCHOLASTIC LEAGUE CONCERT Entry Blank and Comment Sheet

INSTRUCTIONS: Please read the current issue of the Constitution & Contest Rules

School _____ City _____ Number of Students _____ Conference _____

Organization Event _____ Performing Group Type _____ Region _____

Contest Date _____ Deadline Date _____ Director _____

Additional Directors _____

Composer/Arranger	Title of selections and movements	UIL ID#
_____	_____	_____
_____	_____	_____
_____	_____	_____

<p>TO NE</p> <ul style="list-style-type: none"> + - Centered, focused tone quality + - Balance within sections + - Balance between sections + - Intonation within sections + - Intonation between sections + - Centered, focused tone quality + - Dynamic contrasts without distortion 	
<p>TECHNIQUE</p> <ul style="list-style-type: none"> + - Note Accuracy + - Manual dexterity and flexibility + - Rhythmic accuracy + - Rhythmic stability + - Appropriate mastery of articulation + - Observance of ties, slurs and articulation markings 	
<p>MUSICIANSHIP</p> <ul style="list-style-type: none"> + - Appropriateness of style + - Sensitivity to phrasing + - Observance of musical markings + - Appropriateness of dynamic contrasts + - Appropriate observance of tempo + - Demonstrates musical understanding 	

OTHER COMMENTS (No rating applies)

FINAL RATING I II III IV V

Write in rating here _____

Signature of official _____

Appendix B

Letter to Participating Directors Explaining Data Collection Procedures

[researcher's address]

Date, 2010

[name], Band Director
[school name] High School
[school address]
[city, state] [zip code]

Dear [Mr./Ms. Name]:

Thank you for agreeing to participate further in this study. This letter describes the procedures and corresponding dates that will help me stay organized, impacting you and your program as little as possible.

I have mailed consent forms to you, using your school address. They are brief. If possible, please have the forms completed by my arrival date of [day of week, month, numerical date]. As required by The University of Mississippi, a current school demographic enrollment report should be printed on school letterhead and signed by your principal. Again, I appreciate your help and hope these forms do not require too much of your time. The eight questions that I will ask during the interview on [day], are also enclosed in case you would like to look at them ahead of time, though doing so is certainly not necessary. If you have any questions, concerns, or discover date conflicts, please contact me as soon as possible at [researcher's phone number], or [researcher's email address].

[date] Arrive at [school name] High School on [day of week, month, numerical date].
I will check-in at your school's main office as advised at [time].
Set up camera prior to start of class at [time]. Video entire class period.
After class, gather recording materials and checkout of school at main office.

[date] Arrive at [school name] High School on [day of week, month, numerical date].
I will check-in at your school's main office as advised at [time].
Set up camera prior to start of class at [time]. Video entire class period.
After class, gather recording materials and checkout of school at main office.

[date] Arrive at [school name] High School on [day of week, month, numerical date].
I will check-in at your school's main office as advised at [time].
Set up camera prior to start of class at [time]. Video entire class period.
Interview. This should not take more than one hour.
Gather recording materials and checkout of school at main office.

Thank you again for your time and efforts. I look forward to my visit on [day of week, month, numerical date]

Mark Waymire, Doctoral student in Music Education
The University of Mississippi

APPENDIX C

CONDUCTING EVALUATION

*Evaluation should be made while considering **technical** and **musical** aspects of all physical efforts as both play a symbiotic role in conveying information through gesture.*

Conductor name _____ date _____					
<i>1=poor 2=adequate 3=good 4=excellent 5=exemplary</i>					Score (1—5 each)
Conducting Behavior Categories and Descriptions:					
Confidence: stance/lower body, upper body, overall poise, head position, eye contact, etc.	1	2	3	4	5
	<i>circle one</i>				
Beat pattern: clarity, appropriate size, tempo control, etc.	1	2	3	4	5
	<i>circle one</i>				
Right hand (right arm): baton grip, ictus clarity, wrist motion, elbow and shoulder motion, etc.	1	2	3	4	5
	<i>circle one</i>				
Left hand (left arm): appropriate use, clarity, wrist motion, elbow and shoulder motion, etc.	1	2	3	4	5
	<i>circle one</i>				
Plane height: in performers' view, appropriate, musical, relation to body, etc.	1	2	3	4	5
	<i>circle one</i>				
Start and stops: clarity, pulse control, ritardando, accelerando, breath, etc.	1	2	3	4	5
	<i>circle one</i>				
Gestures: cues, baton and left hand cues, musicality, clarity of intent, variety, etc.	1	2	3	4	5
	<i>circle one</i>				
Facial use: starts and stops, eyes, emotion, musicality, etc.	1	2	3	4	5
	<i>circle one</i>				
<i>Note: overlap exists between various multiple conducting behavior categories.</i>					Total: (40 points possible)
Specific Comments: 					

APPENDIX D

State Governing Organizations' Prescribed/Approved Music Lists For Concert Festival/Contest
(These lists were readily available at the time of this study.)
(Not all states use a prescribed music list)

Alabama Bandmasters Association

<http://alabamamea.org/bandmasters/2009-10%20Forms%20and%20Calendars/Cumulative%20List.pdf>

Arkansas Bandmasters Association (use Texas Prescribed Music List)

https://www.utexas.edu/uil/pml/catalog/browse/catalog_id/1/op_event/mat/event/1/acapella/1/accomp/1

Florida Bandmasters Association

<http://www.flmusiced.org/fba/dnn/MusicList/Concert.aspx>

Indiana State School Music Association

<http://www.issma.net/required.php>

Iowa High School Music Association

http://www.ihsma.org/document/PLL_band.pdf

Kansas State High School Activities Association

<http://festivalmanager.com/kshsaa/src/top.htm>

Louisiana Music Educators Association

<http://www.lmeamusic.org/Prescribed%20Music%20List.htm>

Maryland Music Educators Association

<http://www.mmea-maryland.org/Music-Lists.php>

Michigan School Band and Orchestra Association

<http://www.msboa.org/resources/basicmusiclist/>

Mississippi Bandmasters Association

<http://www.msbandmasters.com/musiclist.htm>

North Carolina Bandmasters Association

<http://www.ncbandmasters.org/mpa/mpalistpage.html>

Ohio Music Educators Association

<https://www.omea-ohio2.org/default.html>

Oklahoma Secondary School Activities Association

<http://www.ossaa.com/NonAthletic/Music.aspx>

South Carolina Band Directors Association

<http://www.bandlink.org/events/Concert/MusicList/index.asp>

Southern California Band and Orchestra Association

(also approve use of Texas Prescribed Music List)

<http://www.scsboa.org/festivals/lists.htm>

Virginia Band and Orchestra Directors Association

<http://www.vboda.org/>

West Virginia Bandmasters Association

<http://pshs.wood.k12.wv.us/wvbagml/gml2010.htm>

Wisconsin School Music Association

<http://www.wsmamusic.org/index.php?module=cms&page=95>

APPENDIX E

Electronic Resources for Accessing Recommended Core Repertoire

Fred Allen, Stephen F. Austin University (prescribed music list)

<http://www.tsmp.org/band/band/pdf/CoreRep4.pdf>

H. Robert Reynolds (prescribed music list)

<http://www.linksforband.com/media/ReynoldsCoreRepe.pdf>

American Bandmasters Association. "Ostwald Award Winners."

<http://americanbandmasters.org/award/> (accessed March 13, 2009).

Internet Resources for Wind Band Conductors

Provides Links to Additional Sources (wind repertoire lists, composer's websites, band associations, etc.):

<http://www.musicweb.rutgers.edu/windband/bandlinks1.htm>

APPENDIX F

Published Resources that Discuss and Often List Core Repertoire for the Wind Band

- Battisti, F. L. (1989). My view of the wind repertoire: Part I, 1900-1959. *The Instrumentalist*, 44, 12-17, 105.
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- Berz, W. (2002). Evaluating music in a multifaceted world, *Journal of the World Association for Symphonic Bands and Ensembles*, 7 (32), 38-41.
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- Casey, J.L. (1993). *Teaching techniques and insights for instrumental music Educators*, 2d ed. Chicago: GIA Publications.
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- Erdmann, T. R. (2001). *Problems and solutions in band Conducting*. Lewiston, NY: Edwin Mellen Press.
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- Gaines, D. (1996). A core repertoire of concert music for high school band: A descriptive study. Unpublished Doctoral dissertation, Columbia University, 1996.
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- Gilbert, J. (1993). *An evaluation of compositions for wind band according to specific criteria of serious artistic merit: A replication and update*. Unpublished Doctoral dissertation, Northwestern University, Illinois, 1993.
- Holvik, K. M. (1970). An emerging band repertory: A survey of the members of the college band director's national association. *Journal of Band Research*, 6 (2), 19-24.
- Hornyak, R. R. *The Repertoire of the College and University Band: 1975-1982*. Unpublished manuscript.
- Hunsberger, D. (1977). Repertoire for wind conductors. *The Instrumentalist*, 32, 44-46.
- Jones, P. M. (2005). A Review of dissertations about concert band repertoire with applications for school and college bands. *Journal of Band Research*, 40 (2), 60-83.
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VITA

Mark D. Waymire grew up in Baton Rouge, Louisiana, where he attended Central High School, participating in band under the direction of Larry Causey. After completing his Bachelor of Music Education degree in 1986 at Louisiana State University, Frank Wickes, director, Mark taught high school in Louisiana for one year. He attended Sam Houston State University in 1989 having taught middle school band in East Texas for several years, earning a Master of Music degree in Conducting under the direction of Dr. Gary Sousa. Following his graduate work at Sam Houston, Mark taught at Seguin High School, Seguin, Texas, for ten years. After two years of teaching general music at the 4th and 5th grade level in New Braunfels, Texas, Mark served as Associate Director of Bands at Eastern Michigan University for four years before attending The University of Mississippi beginning in the Fall of 2007 to pursue his Ph.D. in Music Education under the instruction of Dr. Alan Spurgeon and Dr. Michael Worthy.