ABSTRACT

Title of Document: A SYSTEMATIC REVIEW OF MUSIC
TEACHER EDUCATION RESEARCH
WITHIN THE UNITED STATES: 1982-2010

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Music education researchers have explored several issues within music teacher education (MTE) including: coursework, teacher and musicianship skills, design and implementation of undergraduate programs, and music teacher identity development. An examination and discussion of this research will assist those responsible for educating future music teacher educators with developing meaningful and effective teacher training programs. In this systematic review, I examined the research published in peer-review journals between 1982 and 2010 and defended music education dissertations between 2005 and 2010. The purpose of the current synthesis was to synthesize peer-review research relating to MTE and to recount the findings and connections of existing research for current music teacher educators. Before studies were included in the synthesis, I reviewed each one to ensure they met the following inclusion criteria: (a) relevant to the proposed research questions under consideration; (b) published in a peer-review journal or a defended dissertation between 2005-2010; (c) printed in English; (d) published

between 1982 and July 2010; (e) involved subjects who were members of an undergraduate teacher preparation program in the United States; (f) detailed in the presentation of the methodology; and (g) presented the content so that relevant information could be attained. To further explore the implications of the current synthesis' findings, three practicing music teacher educators completed a two-part questionnaire designed to elicit information about their perspectives of MTE research and opinions of the current findings. I reviewed, categorized, and reported responses from each questionnaire as part of the research synthesis intending to identify the role of research in MTE, commonalities, possible concerns, and possible future research needs for meaningful research agendas specific to music teacher education.

A SYSTEMATIC REVIEW OF MUSIC TEACHER EDUCATION RESEARCH
WITHIN THE UNITED STATES: 1982-2010

By

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"Somehow I can't believe there are any heights that can't be scaled by a man who knows

the secret of making dreams come true. This special secret, it seems to me, can be

summarized in four C's. They are Curiosity, Confidence, Courage, and Constancy and the

greatest of these is Confidence. When you believe a thing, believe it all the way,

implicitly and unquestionably."

-Walt Disney

I would like to thank the members of my dissertation committee for their

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Chapter 1: Introduction

Introduction

During the 1910 Music Supervisors National Conference, D. R. Gebhart identified disparities found in the curricula of teacher colleges and state normal schools. Almost 75 years later, the National Association for Music Education (NAfME) President Paul Lehman organized a committee composed of members who represented a broad range of experiences and interests in the music education profession (NAfME, 1987). Lehman charged the committee with examining the status of music teacher education (MTE) in the United States in 1984. Lehman asked the committee to create a document "that could lead music teacher preparation into the next decade" (NAfME, 1987, p. 9). Although the committee members identified several issues facing music education, Task Force Chairman Gerald Olson and his colleagues stated, "Some of the most substantial changes for the next decade will focus on educational accountability" (p. 16).

Nearly twenty years later, under the No Child Left Behind (NCLB) Act of 2001, educational policy makers across the United States would mandate accountability for student progress. In turn, the call for accountability would lead to a Highly Qualified Teacher (HQT) being required in every classroom. In order to identify the characteristics of a HQT and spur educational reform, some educational policy creators sought extant research on teacher education but found surprisingly little (Wilson, Floden and Ferrini-Mundy, 2001). Wilson and colleagues reported that teacher preparation research is scarce. Researchers who have examined teacher preparation have focused on coursework, undergraduate programs, or students enrolled in these programs. A greater examination of teacher preparation as a separate area for study may allow for improved generalization

across the fields. As such, Wilson and colleagues recommended the pursuit of additional research investigations on teacher preparation within specific subject matters, such as music.

In the field of music teacher preparation research, researchers have explored a broad spectrum of topics (e.g., coursework, identity, standards, etc.) and often focused on subjects that reflect educational trends, policy, or examine contemporary educational issues. Researchers' foci reflect their individual interests, the perceived interests of other researchers, or the research methodology that reflects the researcher's strengths (Reimer, 2006). However, viewing research topics by individual focus or strengths does not add to the general realization of an MTE knowledgebase. If researchers are to expand research knowledge in teacher preparation, they must be willing to view the kaleidoscope that is music education research with new light. Reimer further acknowledged this when he wrote, "we remain uncomfortably mired in the traditions established in the earlier years of our research endeavors" (p. 5). For this reason, individual, narrowly-focused studies alone may not sufficiently identify ways to improve teacher preparation, but a comprehensive review of existing MTE research literature may offer critical insights into curricular trends, preservice teacher perceptions about teaching, and possible modifications to the current approach to MTE programs.

A systematic review of music teacher education (MTE) literature will identify and explore the interrelation of topics, trends, and perceptions relating to MTE. The purpose of the current project was to synthesize peer-review research relating to MTE and to recount the findings and connections of existing research for current music teacher educators. Considering that accountability and identifying characteristics of a HQT relate

to teacher preparation, a systematic review of existing MTE research will benefit the profession by providing the music teacher educators and inservice PK-12 teachers with the research findings that will inform current education practices and discussions.

Definition of Terms

An established vocabulary can avoid misinterpretations or misunderstandings of general terms used in research. As such, the presentation of the terms below defined the vocabulary used in the present study.

Period of research. 1982-2010. The timetable for published research examined in the current review. The year 1982 served as the starting point since it was the founding year of the Society for Music Teacher Education (SMTE). The society created purposes that aimed to:

1. Improve the quality of teaching and research in music teacher education.
2. Provide leadership in the establishment of standards for certification of music teachers.
3. Serve as an arm of NAfME in influencing developments in music teacher education and in the certification of music teachers (SMTE, 2012).

Music education. The professional field related to helping students learn music.

Music teacher education (MTE). An area of study in music education and teacher education concerned with undergraduate coursework and related experiences devoted specifically to preparing general, vocal, and instrumental music teachers for PK-12 positions in public, private, parochial, or charter schools.

Research literature. For the scope of this project, research literature is peer-review journal articles related to MTE. Professional literature pertaining to MTE in

general might address a variety of topics: the history and philosophy of music education (sometimes called foundations), curriculum and instruction, activities, identity, socialization, and music instruction. The criteria for inclusion in this synthesis was that the studies be pertinent to MTE without regard to specialty (general, vocal, or instrumental); level (elementary, middle, or high school); and that they do not primarily deal with topics relating to graduate study (Heller, 1999). The current synthesis examined research literature published in peer-review journals between 1982 and July 2010 and dissertations published between 2005 and 2010 in order to ensure the most recent research trends were included beyond studies published in journals. I have assumed that because these dissertations were approved by graduate faculty members, that this equates to completing a peer-review process for a journal.

Research bias. The selection of studies based upon researcher preference without a detailed explanation of inclusion or exclusion criteria. Research bias occurs during the design, measurement, sampling, procedure, or choice of problem being studied and is not acknowledged by the researcher (Cooper, 1998).

Undergraduate. A post-secondary student enrolled in a university/college setting but not at the graduate level. Although the focus of this synthesis is undergraduate music teacher preparation, if graduate level students or alternative licensure programs are included in a study with undergraduates as participants, those investigations were included.

Literature review. Literature reviews serve as a summary of existing research and are familiar to any individual involved in writing theses, dissertations, academic proposals, new research, and/or grants. A review describes the information known on a

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topic, organizes the literature into a topic, and details the need for a proposed study (Creswell, 2005). According to Creswell, a review is conducted to: (a) document how a proposed study will add to existing literature, (b) expose the researcher to literature on a selected topic, (c) justify the need for the proposed study, (d) aid a researcher in developing research skills and (e) discover possible models for their own future research. Literature reviews can take several forms. For the purposes of this study, however, I will describe systematic reviews in detail.

Systematic review. A systematic review is a type of literature review in which the author aims to: (a) address specific research questions, (b) document the methodology for a literature search process, (c) establish criteria for literature inclusion and exclusion based on the scope of the review, (d) examine all related studies regardless of methodology, and (e) provide a clear presentation of the findings (Helmsley-Brown & Sharp , 2003). Systematic reviews of literature have recently emerged as a means to examine existing knowledge on a topic and isolate areas for further research (Hobson & Sharp, 2005).

By using a systematic review, a researcher addresses the criticism of the best-evidence limitation of effect sizes found in quantitative studies. When using a systematic method, a researcher does not rely on statistical testing and examines studies based on a priori criteria. Cooper (1998) defined a research synthesis as organizing research according to specified scientific principles and rules. Cooper stated, "the intended result is a synthesis that can be replicated by others, can create consensus among scholars, and can focus debate in a constructive fashion" (p. xi). Fink (2005) defined a research literature review as "a systematic, explicit, and reproducible method for identifying,

evaluating, and synthesizing the existing body of completed and recorded work produced

by researchers, scholars, and practitioners" (p. 3). To accomplish this, both authors

offered specific stages necessary to perform a review. Cooper (1998) suggested five

stages for a review:

1. Problem formation

2. Data collection

3. Data evaluation

4. Analysis and interpretation

5. Presentation of results (p. 5).

Fink (2005) detailed the process for systematic literature reviews in seven stages:

1. Selecting research questions

2. Selecting the bibliographic or article databases, websites and other sources

3. Choosing search terms

4. Applying practical screening criteria

5. Applying methodological screening criteria

6. Conducting the review

7. Synthesizing the review (p. 3-5).

Cooper, Hedges, and Valentine (2009) wrote, "The terms research synthesis,

research review, and systematic review are often used interchangeably" (p. 6). The

systematic review is the name of the research process that includes a *synthesis* of the

literature. Using Gischel (2008) as a model, to further assist the reader in differentiating

between the current synthesis and studies examined, I will use the term *synthesis* or

research synthesis to identify the current project, while the term *study* will refer to any

research study examined during my investigation. Fink (2005) defined the roles of a synthesis as a "report on current knowledge, justify the need for the research, and to explain the research findings" (p.4). I selected synthesis over review as my goals were the same as those outlined by Fink. Moreover, the term *review* implies an evaluation of the quality of a study's methodology (Cooper et. al., 2009), which was not the intent of the present synthesis. In this study, I will examine peer-review research (either peer-reviewed for journal publication or peer-reviewed by a graduate faculty committee for recent dissertations) which suggests that the research has passed a minimum level of professional scrutiny (Cooper et al., 2009).

Criticisms of systematic reviews. Systematic reviews are common in the fields of medicine and law but their presence in education and social sciences is relatively new. As with any new concept or process, misconceptions exist. According to Petticrew (2001, 2003), critics have incorrectly claimed: (a) systematic reviews include only quantitative studies, (b) their value lies in assessing the effectiveness of interventions, (c) and they are unable to provide specific guidance. Evans and Benefield (2001) discussed the implications and application of the systematic review process in an attempt to analyze strategies that support pupils with emotional and behavioral difficulties in inclusion classrooms. In response to Evans and Benefield, Hammersley (2001) presented criticisms of the systematic review methodology used in their study. Hammersley highlighted two primary concerns with the Evans and Benefield methodology: (a) favoring quantitative design over qualitative due to its scientific approach and (b) assuming the systematic method is preferable to traditional, narrative literature reviews. Hammersley feared that the primary purpose of the selected literature would be answering single, policy-driven

questions and would cast aside qualitative research and wrote, "research can specify not only what *has* been done but also what is *good* or *bad* and what *should* be done [emphasis original]" (p. 550).

How a reviewer decides to approach the methodology is dependent upon the intended audience. The audience may be specialized scholars, policy makers, general scholars or the public (Cooper, Hedges, & Valentine, 2009). The researcher details the process of how the study inclusion criteria is determined and provides an outline of the review process in the methodology to make replication possible. This does not suggest that the study inclusion is without bias. Nonetheless, a systematic review must present enough material and detail to allow a reader to be able to assess if the investigation is valid, the design is accurate, and the reviewer's methods for study selection is thorough.

Significance of a systematic review. The goal of a literature review is to present what general knowledge exists about a topic. A systematic review is a means to find, appraise, and synthesize evidence (Petticrew, 2001). The systematic review, according to Fink (2005), is "a systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners" (p. 3). Fink offered the following reasons for performing systematic reviews:

1. To understanding current knowledge about a topic

2. To inform grant proposals

3. To inform funding proposals

4. To enhance degree proposals

5. To provide definitions of and explanations of current professional practices

6. To identify research methods for developing and implementing programs

7. To locate sources of research support.

A systematic review is essential to record and describe the research that exists on a given topic (Gischel, 2008). Gischel presented both scholarly and practical significance for conducting her systematic review. The current synthesis aims to do the same.

Scholarly significance of a systematic review. Similar to researchers in general education, music education authors have also reported a dearth of research that focuses on music teacher education. Heller (1999) recognized the scarcity of the MTE research literature and hypothesized that disparity may exist because no bibliographical tool exists to control the MTE literature (Society for Music Teacher Education, 2012, para. 1). The scarcity of MTE research may be contributed to the lack of a clear agenda within the profession. Reimer (2006) also noted the disparity and wrote; "we have carried out our research endeavors in the absence of guiding principles" (p. 8). Yarbrough (1984) identified five articles relating to music teacher education in a survey of articles contained in the *Journal of Research in Music Education* (*JRME*) between 1953 and 1983. Schmidt and Zdzinski (1993) reported that MTE was not among the most common foci in music education research journals published between 1975 and 1990. I conducted an informal review of studies found in the *JRME* between 1999 and 2007 and found that, in addition to the few researchers specifically addressing MTE research (e.g., Brittin & Standley, 1997; Colwell, 2006; Duke, 2000; Sample, 1992; Schmidt & Zdzinski, 1993), the majority of researchers examining MTE explored a variety of topics including the

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effectiveness or success of the undergraduates' teaching (e.g., Hamann & Lucas, 1998; Teachout, 1997), evaluation or correction of performances (e.g., Bergee, 1993; Byo, 1993), curricular concerns (e.g., Smith, 1995), or personal concerns regarding teaching (e.g., Austin & Reinhardt, 1999; Conway, 1999).

As part of a single study, researchers can provide a narrowly focused examination of research that supported their topic and therefore may not complete a comprehensive review of research to present what is known about a given topic. As Cooper (1998) claimed, trustworthy syntheses of research are necessary to ensure the amount of research grows. "[S]uch knowledge is helpful to the mission of researchers in the field of music education" (Standley, 1984, p. 156). Researchers focus on, identify, and examine important selective issues that warrant investigation, but results often offer no solutions relevant to MTE as a comprehensive unit. Since music teacher education involves interpersonal skills, intrapersonal skills, and performance ability, "to understand and enhance those interrelations, [research] must be both diverse and coordinated" (Reimer, 2006, p. 10). For research to benefit the discipline, it must be periodically collected and reviewed over time for commonalities, themes, and trends (Duke, 2000; Ebie 2002; & Yarbrough, 1984). The current synthesis aims to provide a synthesis of research relevant to MTE, and will present findings and implications for not only future research, but also for practical application by educators.

Practical significance of a systematic review. Findings and discussion of the current synthesis will aid educators in identifying commonalities or shortcomings in MTE research. The results will provide educators access to research that will permit them to make informed decisions regarding MTE course offerings, program design, future

research foci, and points for discussion.

Previous Reviews of MTE Literature

The ratification of the Music Supervisors National Conference (MSNC) Constitution in 1910 fostered a new era of support and interest in the state of music teaching and music teacher preparation. However, no *systematic review*, as defined by Gischel (2008), currently exists that addresses MTE. A number of authors, not specific to music teacher education, have sought to synthesize existing research literature in different ways. Ebie (2002) identified Yarbrough's 1984 study as the most conscientious attempt at examining the content and subject characteristics of studies published in the *JRME*. Yarbrough reviewed all articles in the *JRME* for research methodology, content focus, and labeling of the topic category. Additional reviews of literature focused on content analyses of research journals (Schmidt & Zdzinski, 1993), the effects of music on learning (Standley, 1996), choral music education (Grant & Norris, 1998), the determination of frequently cited studies (Sample, 1992), journal eminence (Hamann & Lucas, 1998), instructional effectiveness (Duke, 2000), and music teacher identity (Pellegrino, 2009). Although reviews of existing research literature in music are not new, employing a systematic review procedure to address MTE research is.

Need and Importance of the Study

The present synthesis of research literature on MTE aims to organize and examine what Duke (2000) refers to as the "piecemeal of knowledge" that currently exists in the MTE profession. The results of the current synthesis may be beneficial to undergraduate students, those responsible for MTE curricula, and to future primary research endeavors. Similar to Colwell's (2006) MTE programs evaluation, the aim of the current synthesis

was not to propose reformation or solutions, but rather to serve as an examination of current research. The findings of this synthesis will provide fodder for future dialogue between practicing music teacher educators on the status and future of MTE research.

Research Questions

To properly guide a systematic review, the review must establish clear and concise research questions. The reviewer must design research questions that fit the scope of the review and use terminology that will guide the search (Evans & Benefield, 2001). The purpose of the current project was to synthesize peer-review research relating to MTE and to recount the findings and connections of existing research for current music teacher educators. Moreover, I will endeavor to comment critically on the focus, themes, trends, and quality of inquiry. Using Fink as a guide (2005), the following questions direct the current review:

1. What subject matter emerged from examination of MTE peer-review research?

    a. What themes emerged from the synthesis of the research?

    b. What are the findings that emerge from the synthesis of the research?

2. What declarations do current music teacher educators make regarding the state and impact of MTE research and where it should focus?

Method
Overview

Before undertaking this synthesis, I created the research questions, identified the databases for the search, created the search terms, selected the journals, and established the criteria for the inclusion and exclusion of studies. The criteria established by Cooper

(1998) and Fink (2005), detailed earlier in this document, guided the establishment of the

procedures followed in the current synthesis. I took the following steps:

1. Identified the problem and need for the study

2. Prepared for the study selection

    a. Journal selection

    b. Database selection

3. Selected the studies

    a. Development of keywords and search terms

    b. Development of inclusion/exclusion criteria

4. Analyzed the studies

    a. Practical screen

    b. Methodological screen

5. Synthesized the literature

    a. Coding

6. Presented the results

In the current synthesis, I organized these procedures into four stages (See Figure

1): the (1) *Initial Phase*, (2) *Secondary Phase*, (3) *Decisive Phase*, and finally (4) the

Culmination Phase. Chapter 2 provides the details for the organization and steps within

these phases.

Initial Phase
- Develop research questions
- Identify descriptors/keywords employed in search
  - o Outside reviewer validity check
- Select databases for journal search
- Create inclusion/exclusion criteria
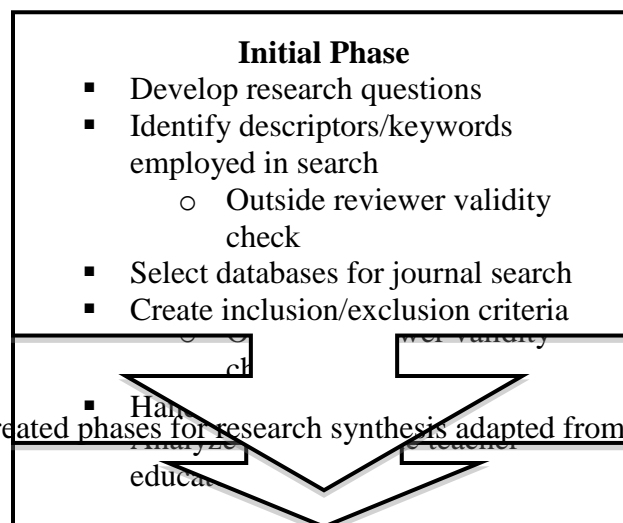
Figure 1: Researcher-created phases for research synthesis adapted from Cooper (1998) and Fink (2005).

Journals Examined

The research in MTE exists in various forms of research publications, dissertations, and symposia. The current review focused on research published in peer-review journals in education published from 1982-July 2010 and dissertations published between 2005 and July 2010. The goal of this study was to examine conclusions from dissertations and research published in peer-review journals in music education and therefore did not examine any book, editorial, government publication, or dissertation reviews. By examining peer-review journals and recent dissertations, each study met some requirements of validity and acceptance by the editors or review boards of their respected professional journals or graduate dissertation committees.

Inclusion and Exclusion Criteria

In the current synthesis, I examined research specific to undergraduates in a MTE program. I established inclusion and exclusion criteria based on the recommendations of Slavin (1986) and Fink (2005). Slavin offered the following inclusion criteria: (a) relevance to issue at hand, (b) methodological adequacy in relation to minimizing bias, (c) value of internal and external validity, (d) sample size, and (e) explanation of what studies are not included. Fink suggested: (a) publication language, (b) journal, (c) author, (d) setting, (e) participants, (f) setting, (g) date of publication, and (h) content of the studies. I will provide further details on the selection criteria in Chapter 2.

Screening Process

The screening process is a critical component of a systematic review as it allows future researchers to replicate the synthesis. (Fink, 2005). Following an extensive search of online databases (detailed in the following chapter), the screening of studies for the

current synthesis occurred as part of the Secondary Phase. The inclusion criteria for the synthesis guided the selection of studies. Following the completion of the database search and the hand search of journals, I completed a Secondary Screening Form (Appendix A) for each study to determine if it met the inclusion criteria. During the Decisive Phase, the examination of each study focused on the purpose and research designs. The examination of a study's design served as a tally of research trends not an evaluation of the methodology because of the initial requirement that all of the selected research articles were found in peer-review journals, meaning each study met some degree of methodological integrity. Therefore, for this synthesis, I will catalog the basic research design, purpose, participants, setting, and study duration.

Presentation of the Synthesis

The presentation of the synthesis consists of four chapters: (a) introduction, (b) methodology, (c) synthesis of the results, and (d) discussion of the findings which includes implications and recommendations for future research. The introductory chapter is traditionally more in-depth than a typical research introduction and its purpose is to "contextualize the problem under consideration" (Cooper, p. 159). Chapter 2, the methodology, presents the process for the review including defining research questions, identifying the inclusion/exclusion criteria, and the coding of the studies. The third chapter provides a description of the literature while chapter four discusses the findings of the review and attempts to summarize the results, interpret research findings, identify relationships of MTE research, and provide suggestions for future research.

Chapter 2: Method

Method

Overview of Different Literature Review Methods

      To aid the reader in understanding the context of a body of literature and to establish the framework of a systematic review, in the ensuing pages I will outline the universal approaches to literature reviews (Fink, 2005). A commonality to various literature review methodologies is the task of identifying important information relating to a topic. How a researcher conducts a literature review, however, is dependent upon the intent of the researcher and scope of the research. Fink identified four common approaches to conducting literature reviews, each with strengths and weaknesses: (a) descriptive or traditional narrative, (b) meta-analysis, (c) best-evidence synthesis and (d) the systematic (research) literature review. An overview of the benefits and limitations of the various types of literature reviews is outlined in Table 2.1.

      Due to the vast array of research topics relating to MTE, I chose a systematic review of literature approach to synthesize the existing peer-review research on music teacher education (MTE). A systematic review aims to: (a) address specific research questions, (b) document the methodology for a literature search process, (c) establish criteria for literature inclusion and exclusion based on the scope of the review, (d) examine all related studies regardless of methodology, and (e) provide a clear presentation of the findings (Helmsley-Brown & Sharp , 2003). Systematic reviews of literature have recently emerged as a means to examine existing knowledge on a topic and isolate areas for further research in social sciences (Hobson & Sharp, 2005). After an exhaustive search of MTE research, I have concluded that the application of a systematic

review for MTE research is relatively novel. A detailed narrative of the literature review

methodologies can be found in Table 2.1.

Table 2.1

Benefits and Limitations of Various Literature Review Methodologies

Types of Literature reviews	Benefits	Limitations
Descriptive or traditional narrative	• Most common • Summative • Supports topic	• Usually narrow in scope • No accountability for study inclusion or exclusion • May produce inaccurate results
Meta-analysis	• Statistical testing • Common hypothesis • Broad range of quantitative studies	• No accounting for quality of individual studies methodologies • Bias by researcher for inclusion • Focuses on quantitative studies
Best-evidence	• Demonstrates effectiveness • Systematic selection of studies	• Possibly leads to policy driven research • No new research is created • Possible exclusion of qualitative studies
Systematic review	• Addresses specific research question • Includes qualitative and quantitative studies • Presents clear criteria for inclusion and exclusion of studies	• Subject to research bias • New to social science research • Possibly leads to policy driven research

Note. Adapted from "Systematic reviews from astronomy to zoology: Myths and misconceptions," by M.

Petticrew, 2001, *British Medical Journal*, *322*(7278), p. 99.

Descriptive or traditional narrative. The descriptive or traditional narrative

approach is the most common review in research (Fink, 2005). The goal of a traditional

narrative review is to provide a summary of research on a topic. Researchers utilize a

narrative approach to identify, isolate, examine, and synthesize previous research findings on a topic relating to their study. Traditional narrative reviews are inconsistent in literature selection because authors often conduct searches with minimal accountings of how or why the literature reviewed is included in their study. While narrative reviews are widely used, Harlen and Schlapp (1998) believe the traditional narrative approach is subjective as the individual reviewer hinders the objectivity of the narrative approach by not stating why selected studies are included. Additionally, the traditional narrative review does not require an accounting by the researcher of studies originally examined but not included in the final literature review (Fink, 2005). In narrative reviews, authors seldom discuss the quality of the studies included in the review and rarely account for the quality of a study's methodology. Therefore, researchers utilizing this more subjective approach may surmise inaccurate conclusions. The systematic review aims to minimize these limitations by detailing search procedures, study inclusion criteria, and clarity of scope.

Meta-Analysis. A quantitative approach to reviewing prior research results in a selection of studies is a meta-analysis. Studies must share a common conceptual hypothesis (Cooper, 1998). The meta-analysts test evidence from various studies using statistical techniques that synthesize the results into new articles (Cooper et al., 2009). Glass (1976) introduced meta-analysis in an attempt to unify the findings of multiple studies using *effect size*. Effect size is defined as the degree an outcome is present in a population (Fink, 2005). The limitation of the meta-analysis lies in the number of studies examined and the criteria established by the researcher for inclusion. "The idea," Fink stated, "is that the larger numbers obtained by combining study findings support greater

statistical power than any of the individual studies" (p. 202). This statistical power index is the effect size, which may be present in any kind of research study that employs statistical testing. However, Fink explained that the statistical findings of a meta-analysis are still observational and therefore subject to the same threats of subjectivity (e.g., undeclared inclusion and exclusion criteria, nondescript search strategies, appropriate method, etc.) and the study's findings may be misleading. Researchers may select studies that only demonstrate significant statistical findings to include in their study, yielding unbalanced results.

Additional reservations for meta-analysis include bias by the researcher for study inclusion, inappropriate procedures for synthesizing the data, and unclear procedures. Slavin (1986) advised not to include every study on a topic in a meta-analysis. In the eight meta-analyses he examined, he found errors that were significant enough to raise questions pertaining to one or more of the researchers' conclusions to their studies. As a result, Slavin recommended including only studies that meet criteria of best-evidence. The systematic review aims to minimize these limitations of meta-analyses by detailing search procedures, inclusion criteria, and clarity of scope.

Best-Evidence. Cooper, Hedges, & Valentine (2009) claimed that the best-evidence synthesis uses two of the components of a meta-analysis: (a) the quantification of effect sizes and (b) the systematic selection of studies. Slavin (1986) introduced the concept of the *best-evidence* approach to conducting a literature review. Slavin argued that including all studies in a meta-analysis does not provide an accurate picture of the findings. For example, if a meta-analysis examined studies with a poor methodology and misinterpreted results, then the presented data may be inaccurate. "Including only those

studies that meet best-evidence criteria is a comprehensive methodology," Slavin wrote,
"and [the literature] is pertinent to the study at hand because there are *a priori* criteria
[established] for adequacy of evidence" (p. 6). Including studies that demonstrated high
internal and external validity as well as clearly defined inclusion criteria is an example of
best-evidence research within a field. The findings of the literature selected for review
demonstrate statistical significance and serve as evidence of effectiveness.

Hammersley (2001) argued that the best-evidence method limits the review to
quantitative studies and can lead to a policy-driven research focus. Hammersley claimed
that policy makers are often intent on examining research that is comprised of numerical
data and have statistically significant findings and ascertained that policy development
required empirical data and as such will drive empirical research. As the field of
qualitative research continues to grow and expand the knowledge base literature,
exclusion of these types of studies limits our knowledge of a topic. However, in response
to Hammersley, Evans and Benefield (2001) posited that policy makers could be guided
by the research produced, but it is not clear how.

<div align="center">**Current Synthesis**</div>

I employed a systematic literature review in the current study aimed to identify,
analyze, and synthesize peer-review research relating to MTE. The synthesis presents
findings and connections for current educators by (a) providing clarity to the existing
literature, (b) identifying the research that exists about the subject matter, and (c)
presenting areas for future study. The "research" or "systematic" approach to examining
literature evolved as an answer to the limitations often associated with traditional
narrative reviews which include limited coverage of literature, unreliable findings,

unexplained methodologies, unclear literature selections, and author bias (Hobson &

Sharpe, 2005). By employing a systematic review, a researcher can detail what research

exists about a topic in order to inform professionals of the latest research (Fink, 2005).

Therefore, it is important that a researcher performing a systematic literature review

include as much information as possible concerning the search and study selection

process to inform the reader and present him/her with information so that they may assess

the quality of the review (Cooper et al., 2009). To accomplish this, a researcher must

explain the development of inclusion and exclusion criteria, detail the literature retrieval

process, and attempt to review all available research.

In this chapter, I will provide details about a researcher-created process of

synthesis (see Figure 1, p. 14) modeled on the work of Cooper (1998) and Fink (2005).

The four phases of synthesis are: (a) the Initial Phase, the determination of research

questions and inclusion criteria; (b) the Secondary Phase, the search of databases for

studies that meet the inclusion criteria; (c) the Decisive Phase, review of studies that

satisfy the inclusion criteria; and (d) the Culmination Phase involving discussion of the

findings of this report. Additionally, I will provide a description of the limitations

inherently contained as part of the review.

Validity in Study Retrieval

An important consideration in a systematic literature review is the validity of the

study selection process. To maintain strong validity throughout a synthesis, Cooper

(1998) suggested that researchers should (a) perform an exhaustive search, (b) detail the

method for collecting studies, (c) include indices of potential retrieval bias, and (d)

summarize sample characteristics of individuals used in separate studies. Typically,

groups of researchers work together to complete a systematic review due to the large

amount of research literature. Dialogue among these reviewers during the process helps

to establish validity of the review. The discussion permits viewpoints and debate

concerning research design, study retrieval, inclusion possibilities, and coding. When a

single reviewer is responsible for examining and coding large amounts of research,

monitoring the validity is a challenge. However, objectivity can improve when a single

reviewer performs a second review of randomly selected studies and agreement exists

between the first and second review (Fink, 2005). Rather than accepting a study for

review simply because it is experimental in nature, Slavin (1986) argued the literature

selection method must be systematic and requires studies to meet inclusion criteria

established by the researcher before the review. However, as Slavin stated:

> Reviews of social science literature will inevitably involve judgment. No set of
>
> procedural or statistical canons can make the review process immune to the
>
> reviewer's biases. What we can do, however, is to require that reviewers make
>
> their procedures explicit and open and we can ask that reviewers say enough
>
> about the studies they review to give readers a clear idea of what the original
>
> evidence is (p. 7).

For each phase of the current synthesis, I detail the processes to maintain objectivity.

Single Reviewer Limitations

Based upon guidelines presented by Fink (2005), I used the following procedures

for a single-reviewer synthesis to maintain objectivity by (a) presenting detailed inclusion

and exclusion criteria; (b) providing precise search procedures; (c) identifying databases;

(d) and utilizing three outside reviewers to assist with validity and objectivity throughout

the process. I will outline a description of the outside reviewers' roles and responsibilities later in this chapter. Additionally, I sampled and reviewed the studies two weeks apart to ensure studies were included or excluded for the same reasons. I conducted a review of 10 random samples of abstracts from each database or journal two weeks after the initial review to establish intrarater reliability (Fink, 2005). The second review produced the same results suggesting perfect intrarater reliability (Fink, 2005), but also suggested the need for an outside review to better ensure reliability and validity.

The coding process that I undertook may provide additional limitations such as exclusion of a study or misinterpretation of search terms. However, the methodology of the synthesis aims to minimize this event by establishing strong intrarater reliability using a method detailed later in this chapter.

Outside Reviewers

Three outside reviewers (see Table 2.2) aided in ensuring validity, objectivity, and reliability throughout the current review. Each outside reviewer was actively involved in music education research and had earned a Doctor of Philosophy in music education from a major university between 2007-2008. I selected the reviewers using the following considerations: (a) they were actively involved in music education research, (b) collectively they held diverse interests in research methodologies as represented by the methodology employed in their dissertation research, (c) they were knowledgeable and experienced in preparing future music educators, and (d) they had access to the electronic databases or journals used in the review.

Table 2.2

Education and Experience of Outside Reviewers

| | Teaching experience (In Years) | | | | | |
Reviewer	Public school	Post-secondary*	Highest degree earned	Date degree conferred	Classification of issuing institution	Dissertation methodology
A	8	9	PhD	2008	Research I	Historical
B	8	3	PhD	2008	Research I	Qualitative
C	5	5	PhD	2007	Research I	Quantitative

Note. * = Total years teaching at collegiate level included those served as a teaching assistant.

Current Music Teacher Educator Focus Group

In addition to the three outside reviewers utilized in the study, a focus group consisting of three currently practicing music teacher educators (Table 2.3) participated in the current study as a means to bolster validity. Their purpose was to reflect on the state of MTE research both before and after reading the findings of the current synthesis. Before receiving any findings of the present synthesis, the current music teacher educators completed a brief researcher-designed online questionnaire consisting of five questions relating to their perceptions of MTE research and supplied basic demographic information (Appendix B). Upon receipt of the first completed questionnaire, I sent an electronic mail correspondence to the current music teacher educators that contained the second online researcher-designed questionnaire (Appendix C) along with attachments containing the findings of the current review. The current music teacher educators

received the findings in two formats. The first was a copy of Chapter 3 (Synthesis of Results) from the present study. The second format was a bulleted summary of chapter 3 of the review (Appendix D). The focus group members chose whether to review one or both versions.

Table 2.3

Current Music Teacher Educator Focus Group Members

Reviewer	Post-secondary teaching (In years)	Highest academic rank	Years at rank	Classification of institution
A	30	Professor	7	Masters college or university
B	21	Professor	7	Doctoral granting university
C	8	Assistant Professor	8	Doctoral granting university

The current music teacher educators had a combined 59 years of higher education teaching experience and represented three different institutions. I selected the current music teacher educators because they: (a) were currently active in music teacher education programs, (b) collectively held diverse research interests (c) have published numerous articles in peer-review journals within the field of music education, and (d) served in an editorial role for a music education journal.

Limitations of the Search

Slavin (1986), Cooper (1998), and Fink (2005) each emphasized the importance of conducting an exhaustive systematic literature review on a topic. To this end, the authors recommended the examination of both published and unpublished works. Slavin concluded that the most common limitation of research reviews is the exclusion of

dissertations and unpublished reports. In an attempt to include recent research trends and investigations, I examined dissertations published between 2005-2010. Cooper cautioned against solely examining published studies, while Fink encouraged consulting with experts in the field for guidance concerning unpublished reports or studies. Both Cooper and Fink claimed that systematic reviews may be explored as a means of creating a knowledge base of what is known about a topic and suggest that the review design must fit the scope of the project. In addition, they acknowledged that the audience for the review must be considered. The intent of the present review was to establish a baseline of peer-review research in music teacher preparation, therefore, I elected to include recent dissertations.

Acknowledging the emphasis for an exhaustive review of all research, I deemed that the scope and intent of this review warrants focusing on research published in selected peer-review journals. Studies published in peer-review journals provide the reader with an additional assurance of validity and reliability in study retrieval. Peer-review journals serve as an academic record and are frequently a source of information that researchers consult to establish their own baseline knowledge of a topic. Journals are easily accessible either online or housed in most academic libraries in hard copy format.

Using research focusing solely on published studies is not without precedence in music education research. Brittin and Standley (1997) examined research in music education/therapy. The authors limited the examination of research to peer-review journals since "those selected sources will have been subjected to the most stringent standards of peer-review for the determination of their content" (p. 148). The researchers excluded book reviews, dissertation reviews, and reader comments or responses.

Yarbrough (1984) limited her research to a content analysis of the peer-review articles in the *Journal of Research in Music Education*. Similarly, Ebie (2002) examined the *Journal of Research in Music Education* for research samples.

Procedures

Phases Overview

The current review of literature consisted of four phases: (1) Initial, (2) Secondary, (3) Decisive, and (4) Culmination. The Initial Phase included the creation of research questions, identification of keywords for the database search, and establishment of the criteria for including and excluding studies in the present synthesis. The Secondary Phase involved searching selected databases and peer-review journals, followed by a screening of each study to determine if it had met the inclusion criteria. If a study met the inclusion criteria, the study underwent a subsequent examination during the Decisive Phase. This succeeding review involved an examination of each study and coding of studies that met the inclusion criteria. The Culmination Phase included the findings of the current synthesis, reported conclusions, and suggested possibilities for future research.

Initial Phase

Research questions. Systematic reviews begin with the development of specific research questions (Fink, 2005). The following questions guided the current review:

1. What subject matter emerged from examination of MTE peer-review research?

    a. What themes emerged from the synthesis of the research?

    b. What are the findings that emerge from the synthesis of the research?

28

2. What declarations do current music teacher educators make regarding the state and impact of MTE research and where it should focus?

The research questions not only served as questions for the synthesis, but also assisted in the development of keywords, descriptors, and identifiers employed during database searches.

Keywords/descriptors. Keywords employed in the database search process need to encompass a broad search spectrum to ensure inclusion of possible studies. Considering the scope of the current synthesis and the intent to create a baseline report, I applied terms relevant to music teacher education. To create keywords, I examined the database subject indexes, subject terms, author keywords and descriptors associated with each study as a possible means of identifying further studies. The outside reviewers examined the keywords/descriptors developed for the current review and provided any additional terms that could be applied for a search. As a result of this collaboration, I added instruction to the list of keywords.

The research questions provided the keywords or descriptors applied in the database search (Cooper, 1998; Fink, 2005). The initial search utilized the following combinations of descriptors:

Music + Teacher + Education

Teacher + Preparation + Music

Teacher + Training + Music

Preservice + Music + Education

Preservice + Music + Training

Music + Undergraduate + Teaching

Music + Undergraduate +Training

Music + Teacher + Preparation

Music + Teacher + Education

Music + Undergraduate + Education

Music + Educator + Training

Music + Educator + Preparation

Music + Educator + Undergraduate

Music + Teacher + Instruction

Music + Educator + Instruction

Preservice + Music + Instruction

Database selection. Cooper, Hedges, and Valentine (2009) believed that the database selection should be determined by factors relating to the research questions such as (a) the disciplinary scope, (b) access, (c) date, (d) language and country. Considering that the scope of this synthesis included research in peer-review journals and dissertations commonly accessed via online methods, a search using online databases was appropriate. An advantage to using the databases was that the electronic keyword reviews the title, text, and abstract of a study. Grant and Norris (1998) used Education Resource Information Center (ERIC) and Répertoire de Littérature Musicale (RILM) databases in their study on choral music education. Databases utilized in the current synthesis included: ERIC and Academic Search Premier (ASP), and ProQuest Dissertation Abstracts International (DAI). These databases were selected due to their availability for future researchers, their common use in the social sciences, and their content, which contains abstracts or full text for the peer-review journals or dissertations. Access to the

databases happened both on and off site via the online library access point EBSCO HOST (EBSCO) as part the library system of the University of Maryland. In order to employ search techniques specific to, and most appropriate for use in EBSCO, I reviewed online tutorials on how to use EBSCO titled *Introduction to EBSCO Host, EBSCO Basic Search Academic Libraries,* and *Advanced Search Guided Style*.

Hand searching journals. In addition to the electronic databases, I performed a manual search of the peer-review journals as keywords used in online searches may be inconsistent (Fink 2005). The search involved an examination of the table of contents for each journal. If the title included one of the keywords, I reviewed the article to see if the study met the inclusion criteria. For journals available in print (i.e., *Journal of Research in Music Education* (JRME), *Bulletin of the Council for Research in Music Education* (Bulletin), I conducted the hand search using searched using hard copies. For the journals partially available in print, I conducted the hand search using both hard copies and online access (i.e., *Update: Applications of Research in Music Education* (Update) and the *Journal of Music Teacher Education* (JMTE). For the volumes of these journals available only in electronic form, I conducted the hand search via online access.

Secondary Phase

Inclusion criteria for study review. The development of inclusion criteria for the present review emerged based on the work of Cooper (1998) and Fink (2005). A study was included if it was:

1. relevant to the proposed research questions under consideration

2. published in a peer-review journal or defended dissertation

3. printed in English

4. published between 1982 and July 2010 (between 2005 and 2010 for dissertations)

5. conducted using subjects who were members of an undergraduate teacher preparation program in the United States

6. methodologically clear so that the findings could be replicated

Establishing the inclusion criteria and keywords permitted a pilot test of the screening process. The outside reviewers were consulted to verify that the inclusion criteria aligned with the research questions. Input from reviewers provided feedback on the research questions and whether the identified inclusion criteria supported the intent of the review.

Exclusion criteria. Educational research includes many theses, journals, handbooks, and conference presentations. This grey literature, defined by Cooper, Hedges, and Valentine (2009) as "that which is produced…in electronic and print formats not controlled by commercial publishers" (p. 104), may not be easily accessible. To include all forms of grey literature, I would need to examine each paper or study for its methodological quality and construct. Although paper presentations, conference proceedings, and government reports provide beneficial, and oftentimes the most recent research, the scope and breadth of that research is so broad a single reviewer cannot provide an adequate and thorough review. A comprehensive review required to complete a task of this size is beyond the scope and means of the current synthesis.

Peer-review journals. Cooper (1998) suggested the primary criterion used by most peer-review journals for acceptance is the method. Therefore, a published study has passed some level of peer-review and the peer-review functions as a means of "editorial quality control" (Cooper, Hedges, & Valentine, 2009, p.65). Brittin and Standley (1997) wrote "that the most eminent, refereed publication sources…[should] be selected for

analysis with the assumption that those selected sources will have been subjected to the most stringent standards or peer-review for the determination of their content"(p. 148). Randles, Hagen, Gottlieb, and Salvador (2010) examined eminence in music education research and found that the most eminent bibliographic journal sources contained in *The New Handbook of Research on Music Teaching and Learning* were the *Journal of Research in Music Education* and *Bulletin of the Council for Research in Music Education*.

Criteria established by Hamann and Lucas (1998) guided the selection of journals for this review. As such, the journals must have:

1. focused on music education,

2. had a national distribution in the United States,

3. served as a record of research activity in music education, and

4. served as a prominent journal in the field of music education.

EBSCO database search strategy. Electronic databases provided access to an inclusive collection of literature published in peer-review journals. I completed the database search fields using the keywords listed earlier and their combinations (e.g., keyword = music, keyword = teacher, keyword = education) and as a single statement with Boolean operators (e.g., keyword = music and teacher and education). To narrow the search results, I utilized two limiters, located below the main search fields. The first limiter, scholarly (peer-review) journals, restricted results to the scope of the review and the second limiter, period, listed January 1, 1982 through July 31, 2010. I examined the search results to ensure they included the keywords. If the study included keywords not identified for the current review, then an additional search occurred using that keyword as

part of the search terms combinations. For example, the term instruction was not listed as and original keyword. However, as the outside reviews examined the list of terms, they identified the term instruction and it was included as a keyword for the database searches.

Recording results from initial search. A practical screening determines the "broad range of potential studies" (Fink, 2005, p. 2). Using the bibliographic software Endnote X, I cataloged the initial search results by descriptors and database. For each of the initial studies identified in the search results, I reviewed the study's title and abstract to determine if the keywords were present. To help aid in the reliability of this initial search process, the outside reviewers received instructions on the online search process (Appendix E) and the Online Database Search Hits Results form (Appendix F) that provided a listing of the keywords used for the database searches. Reviewers recorded the number of hits for each set of search terms within each database on the Online Database Search Hits Results Form. The tabulation of the responses from the outside reviewers and the researcher, seen in Table 2.4, verified the positive hits in the databases search using the keywords provided.

Table 2.4

Summary of Initial Hits by Outside Reviewers and Researcher

Keywords/Descriptors	Researcher	Outside Reviewer		
		A	B[a]	C
Music + Teacher + Education	1466	1466	1609	1466
Teacher + Preparation + Music	99	99	105	99
Teacher + Training + Music	306	306	348	306
Preservice + Music + Education	38	38	37	38
Preservice + Music + Training	14	14	14	14
Music + Undergraduate + Teaching	49	49	54	49
Music + Undergraduate + Training	25	25	27	25
Music + Undergraduate + Education	96	96	107	102
Music + Educator + Training	128	128	143	128
Music + Educator + Preparation	50	50	50	50
Music + Educator + Undergraduate	24	24	24	24
Music + Teacher + Instruction[b]	1706	n/a	n/a	n/a
Music + Educator + Instruction[b]	1406	n/a	n/a	n/a
Preservice + Music + Instruction[b]	39	n/a	n/a	n/a

Note: [a]The version of EBSCO Academic Search at Researcher B's Institution is Academic Search Complete, not Premiere. [b] The term *instruction* was added to the search terms following the initial search by the outside reviewers.

In the current synthesis, I examined research literature published in peer-review journals between January 1982, the year of the formation of the Society for Music Teacher Education (SMTE), and July of 2010. The formation of the SMTE recognized the developing focus on MTE and the emerging presence of MTE research, thus serving as a valid point of origin for the literature review. Additionally, I examined dissertations published between 2005 and 2010. After reviewing the studies from the various databases and removing duplicates, 766 studies (Table 2.5) met the initial inclusion criteria and progressed to the Decisive Phase for further review.

Table 2.5

Number of Initial Phase Hits by Database and/or Journal

Source	Number of Initial Phase Hits
ERIC	81
Academic Search Premiere	159
Journal of Research in Music Education (JRME)	244
Bulletin of the Council for Research in Music Education (CRME)	68
Journal of Music Teacher Education (JMTE)	49
Update: Applications of Research in Music Education	31
Dissertation Abstracts International	134
Total	766

Decisive Phase

Studies that met all inclusion criteria of the initial search underwent a second screening that included reading of the title, purpose, abstract and text of each study. If the studies met the inclusion criteria, they progressed to the coding stage.

Coding of the studies. Following the initial screening, I examined the studies using a researcher-created coding instrument developed specifically for the present synthesis based on suggestions made by Cooper (1998). The Decisive Screening Form (Appendix A) included the following elements: author(s), year of publication, journal, and the listing of inclusion criteria. Each study identified during the Initial Phase underwent additional analysis using the Decisive Screening Form. The studies that met all the inclusion criteria created the sample of studies synthesized as part of the current

review. As with the previous phase, the bibliographic software Endnote X aided in organizing the resulting list of studies.

To support the reliability of the coding process, the outside reviewers received the Online Database Search Tally Form (Appendix H) which listed keywords used in the database searches. Using the Outside Reviewer Tabulation Form (Appendix I), the reviewers' instructions (Appendix G) were to identify and provide twenty (20) studies that they believed met the inclusion criteria and they thought should be considered for further review. The twenty studies reflected a combination of the database and search term choices selected by the outside reviewers. The researcher reviewed these identified studies for inclusion in the study and did not find any discrepancies. After reviewing the 766 articles, 215 studies (Table 2.6) met all required inclusion criteria.

For each of the 215 identified studies, I cataloged the title, author, purpose, sample, population, site, research design, and findings. The individual study's abstract and full text provided this information. I categorized the research into four main themes: individual focus, the development of musicianship skills, preservice music teacher instruction, and miscellaneous studies regarding MTE. The creation of the miscellaneous section allowed for the inclusion of studies that related to MTE but did not fit into one of the other themes. The terminology the study author used in the describing the unique purpose of each individual study served as a main delimiter for this categorization. Further review of the study's text and findings reinforced the classification of the studies. As a single reviewer, I relied on experience and interpretation of the author's text to classify the studies. Any misrepresentation of the intent of the original author's purpose is the fault of the current researcher.

Table 2.6

Decisive Phase Final Number of Studies Identified by Journal

Journal Titles	Journal Abbreviation	Number of Studies
Bulletin of the Council for Research in Music Education	CRME	35
Dissertation Abstract International	DAI	28
International Journal of Music Education	IJME	6
Journal of Music Teacher Education	JMTE	31
Journal of Research in Music Education	JRME	96
Music Education Research	MER	3
Multicultural Perspectives	MULTIPER	1
Update	UPDATE	15
Total		215

Methodological review. In traditional systematic reviews, researchers examine studies for the quality of their methodology. Because inclusion in a peer-review journal or a passed dissertation defense implied a certain level of methodological integrity, I will not review the methodology or address the strength of the design, but rather report the: (a) author; (b) journal; (c) purpose; (d) participants; (e) setting; (f) duration, and (g) research design to provide the profession with basic information regarding trends in research designs. Creswell (2005) provided the definitions for the research designs:

- Experimental Design: To test an idea (or practice or procedure) to determine whether it influences an outcome or a dependent variable (p. 283).

- Correlational Design: the researcher is interested in the extent to which two variables (or more) co-vary, that is, where changes in one variable are reflected in changes of the other (p. 327).

- Survey: Procedures in quantitative research in which investigators administer a survey to a sample or to the entire population of people in order to describe the attitudes, opinions, behaviors, or characteristics of the population (p. 354).

- Grounded Theory: A systematic, qualitative procedure used to generate a theory that explains, at a broad conceptual level, a process, an action, or interaction about a substantive topic (p. 396).

- Ethnography: Qualitative research procedures for describing, analyzing, and interpreting a culture-sharing group's shared patterns of behavior, beliefs, and language that develops over time (p. 436).

- Mixed Methods: A procedure for collecting, analyzing, and "mixing" both quantitative and qualitative data in a single study to understand a research problem (p. 510).

Culmination Phase

The final phase (culmination phase) included the identification, the presentation of the individual study's findings, and the discussion of themes that emerged from the synthesis. In this phase, I will offer implications for future MTE research. The culmination phase is detailed in Chapter 4.

Final Report

The final report will provide an annotation of all the studies reviewed, a synthesis of the findings, and evidence of any commonalities identified among the findings. The report of the findings will in turn lead to a discussion of the findings, and ultimately recommendations for future studies and possible implications for practice.

Chapter 3: Synthesis of Results

Synthesis of Results

Overview

In the following pages, I will synthesize findings into four main themes:

individual focus, the development of musicianship skills, preservice music teacher

instruction, and miscellaneous studies on music teacher education (MTE). For each

theme, I will present an overview of the included studies' purpose, method, participants,

setting, and major findings. Fink (2005) stated, "Syntheses are interpretations of the

reviewer's findings based on the reviewers' experience and the quality and content of the

available literature" (p.5). Every attempt was made to present findings as accurately as

possible. Any misrepresentations of findings are that of the researcher and not the

original author.

After an examination of MTE research, I found 766 studies that met the search

criteria. A secondary review of each study's abstract and purpose of research qualified a

final 215 studies for analysis. Similar to Duke (2000), I used each study's purpose/s to

determine common research foci. For the purpose of the current synthesis, the researcher-

created identifiers are not intended to serve as definitions but rather allow each individual

study's findings to be illuminated through their individual frameworks. The final studies

emerged into four categories:

1. Individual Focus ($n = 29$): Studies examined individual beliefs, identity,

   socialization, and career mindset of preservice music teachers

2. Development of Musicianship Skills ($n = 73$): Studies examined private

   instruction/practice, time use during practice, goals during practice,

performance techniques, health issues, and performance evaluation of

preservice music teachers

3. Preservice Music Teacher Instruction (n = 106): Studies examined the teaching

of music, educational pedagogies, rehearsal skills, teaching methods courses,

vocal/instrumental techniques courses, acquisition of content knowledge, field

experience/student teaching, use of technology in instruction, and the

evaluation of others or self-teaching episodes among preservice teachers

4. Miscellaneous MTE Research (n = 7): Studies examined aspects related to

MTE such as ensemble performances, recital attendance, teaching private

lessons, and health.

In the following narrative, I will present the purpose and findings of each report

included in the current systematic review. I will present these studies in four main

categories with subcategories. A brief summary and table are presented at the conclusion

of each category.

Individual Focus

Researchers have examined the development of the individual concept of self as a

musician, educator, and the individuals' perceptions of peers or faculty on their musician

or teacher identity. In the studies included in this section, (n = 29) researchers examined

participants' individual beliefs about teaching, identity development, the impact of

socialization, and the career mindset of preservice music teachers. The presentation of the

synthesis mirrors the development of an individual: what is known about the preservice

teacher, what influences exist as one decides to become a teacher, what influences one's

growth as musicians/teachers in the MTE program, and what informs intentions of

entering the profession. Other researchers investigated the professional growth of preservice teachers' beliefs about teaching, advocacy, pursuing a career in music, and professional goals.

Self-beliefs. In research addressing a music student's success or failure in music teacher education, researchers found that high academic performance was a common correlation to a student's success (Asmus, 1986; Legette, 2002). Asmus used Attribution Theory as a lens to examine music education and music therapy majors' ($N = 143$) personal experiences and relationships during their tenure in music and school. Specifically, Asmus examined the way self-influences attributed to success or failure and how success or failure is attributed to others. Participants responded to an 80-item researcher-designed instrument designed to assess attribution perceptions of others in achievement situations, self-attributions, and success. The researcher used the instrument to gather data on participants' demographic information such as sex, career goals, and music performance area. Asmus reported when participants identified the reasons for success or failure of others, they based their evaluations on effort while personal success or failure was associated with the difficulty of the task. Using a MANOVA, Asmus found that music education majors were more likely to contribute success or failure to ability and had more positive perceptions of their music ability than did music therapy students. Asmus concluded that the success of others was related to the amount of effort given while individual success was based upon task difficulty.

Legette applied the Attribution Theory to an investigation of preservice teachers ($N = 258$) and found supporting evidence for previous research (Asmus, 1986). Utilizing the *Music Attribution Orientation Scale* (Asmus, 1986), Legette sought to investigate not

only the causes for success or failure, but if differences existed between music majors and nonmajors, gender, performance medium, and school classification. Legette discovered that across all groups, music ability and effort were associated with success or failure in music. No significant differences by major, however existed. Legette found a significant difference in the causal attributes of effort and ability among performance medium (vocalists versus instrumentalists). No significant difference by gender or major (vocal or instrumental) for music performance ability existed. The undergraduates' perception of success improved with the reinforcement of student behaviors, encouragement, and with assisting the student on identifying issues within K-12 student control as areas for improvement.

Austin and Reinhardt (1999) examined preservice music teachers' beliefs about the validity and truthfulness of various music education philosophical statements. The researchers surveyed 137 music education majors attending six different institutions in various stages in their program about their philosophical beliefs. Participants enrolled in an introductory music education course, a music education methods course, or in their music-student teaching completed a 75-item questionnaire. The first section, validity beliefs, provided students with a series of music philosophy statements. The students responded to the statements using a 5-point scale (1 = not effective at all; 5 = extremely effective). The second section again provided the subjects with advocacy statements, however this time the subjects were to imagine various community and school-decision makers using the statements. Participants evaluated the effectiveness of the advocacy statements in convincing the decision makers in maintaining music as part of the public school curriculum. The authors found that undergraduates identified all validity

statements as at least "more true than false" and that all advocacy statements would be at a minimum "moderately effective." Statements relating to the validity of music and advocacy were strongly related further suggesting a belief for advocacy based on philosophical statements the undergraduates considered as valid or true. Austin and Reinhardt did not uncover a clear hierarchy of beliefs among the preservice teachers. The authors cautioned that "preservice music teachers may be unrealistically optimistic in their [philosophical] beliefs" (p. 27) and, despite the efforts of music teacher educators, continue to "think as they were taught" (p. 18).

Development of musician/teacher identity and socialization. Bergee (1992a) examined the development of occupational identify. Bergee attempted to identify attitudes of preservice music teachers towards occupational status. Specifically, the study examined the sources of negative and positive messages aimed at undergraduate music majors regarding the choice of music teaching as a profession, undergraduates' attitudes about the music profession, their attitudes regarding the undergraduate environment, and their predictions about future career goals. Participants ($N = 96$) were music education undergraduates from three midwestern universities. Bergee developed a questionnaire designed to identify demographics, sources of encouraging and discouraging messages regarding their choice of a major, perceptions of the profession at large, attitudes regarding the undergraduate environment, and predictions about future professional efficacy. The researcher found no statistically significant differences between university setting or academic concentrations. Analysis of the combined participants' responses revealed a majority (78%) of undergraduates made the decision to major in music education while in high school. When responding to options for another career choice,

50% indicated that they would choose music performance and 40% designated teaching in another discipline. Twenty-six percent of respondents reported that morale was high among a majority of the students, 65% reported morale was uneven, and 9% indicated low morale. A total of 63% of the participants considered changing their major at least once while 38% never considered it. One third of the participants noted that they had received negative comments from individuals regarding their career choice. These findings revealed preservice music teachers viewed the music teaching occupation as the best of all professions (38%), one of a number of occupations they would be happy with (53%), or reported they would be happy doing something else (9%). Furthermore, there does not appear to be a sense of inferiority concerning their career choice. Bergee also found that participants' music teachers and immediate family members were influential in the decision to pursue music education.

Many variables influenced undergraduates' decision to pursue a career in music education. McClellan (2007) found that a primary influence was family support while Sichivitsa (2003) found that the value placed upon music by parents was a primary influence. Froehlich and L' Roy (1985) found the benefit of student conductor experiences or similar events for developing teacher identity. This finding has been echoed by subsequent (Isbell. 2008; Madsen & Kelly, 2002; Thornton & Bergee, 2008). Isbell (2008) reported the interaction with nonmusic education students and the additional support by music education faculty and ensemble directors strengthened the occupational identity more so than primary socialization interactions.

Kerchner (2006) interviewed six undergraduate women at the end of each year of study in order to track their development from first-year collegiate students to graduating

prospective educators. The author interviewed each student during the final week of the spring semester. Questions focused on the preservice teachers' views concerning truth, knowledge, themselves as sources of knowledge, their peers as sources of knowledge, and the people and experiences in their schools that may have contributed to their development in the concept of self. The researcher coded each transcript and Kerchner then compared emerging themes to those identified by Belenky, Clinchy, Goldberg, and Tarule (1986/97) in their book *Women's Way of Knowing*. Belenky et al. identified five perspectives of cognitive development for individual:

1. Silenced knower (unquestioning, denies self-needs and feelings, believes to have no "voice")

2. Received knower (duplicates knowledge transmitted by authorities, tries to live up to the images and expectations of others)

3. Subjective knower (explores self as source of knowledge gained from first hand experiences, holds a personal truth)

4. Procedural knower (respectfully questions authorities' voices, considers multiple perspectives in problem-solving and dialogue)

5. Constructed knower (integrates reason, intuition, experience, and others' knowledge; reflective thinkers).

Kerchner primarily found that women developed their beliefs at various periods in their educational training and in no particular sequence. Additionally, Kerchner reported that the third and fourth years served as transition years from that of a subjective knower to procedural knower. Kerchner identified a constant identity dichotomy in music teacher education in that a musician role emerged as a dominant role over that of educator.

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Participants in the study reported a focus and importance in developing their skills as a performer more so than the development of skills needed to be an educator. The participants' social interactions focused on individuals in church, music, community, and friends with similar interests (musical and non-musical), beliefs, and styles of living.

Campbell and Thompson (2007) explored the concerns of preservice music education students. They based their study framework on Fuller and Bown's (1975) development theory, which outlines a linear progression from *self* to *task* to *impact* concerns. Fuller's (1969) defined self-concerns as those dealing with a teacher's sense of adequacy and competence. Task concerns address a teacher's preoccupation with a specific choice or duty, while impact concerns reflect a teacher's shift of focus to student learning including motivation and identifying individual's learning differences. A cross-sectional selection of participants ($N = 1,121$) enrolled in introduction to music education courses, methods courses, field experiences, and/or student teaching at 16 tertiary institutions completed the *Teacher Concerns Checklist* (Borich, 2000). Following data analysis, the authors revealed that students in field experiences had higher concerns regarding their teaching ability than students enrolled in introductory music education courses, methods courses, or student teaching. Campbell and Thompson suggested that teaching concerns relate to the current course or academic year of a subject. Female students consistently reported higher levels of concerns than male students and no significant differences existed when isolating primary area of interest (general, choral, or instrumental). However, when examining preferred teaching level, participants who identified early childhood as a first choice demonstrated the highest level of concerns compared to other groups. Despite their year or course in which preservice music

teachers were enrolled, impact-related issues emerged as a greater concern than the task- or self-related issues. The authors concluded that a variation from the sequence identified by Fuller and Bown, possibly due to the cross-sectional sample. The main effect for class size was statistically significant for overall concerns F (3, 1095) = 3.98, and for the subsets of self concerns F (3, 1095) = 3.48, task concerns F (3, 1095) = 3.17, and impact concerns F (3, 1095) = 3.29.

In an additional study, Thompson and Campbell (2003) examined preservice teacher identity development. The authors explored the use of metaphors in preservice teachers' representations of themselves as teachers and the relationships of these metaphors to their conceptions of practice. Music education students ($N = 99$) enrolled in two sections of an Introduction to Music Education course participated. The researchers provided a brief discussion on the use of metaphors to develop meaning and to reflect upon teaching experiences. Each participant: (a) drew a picture of themselves as a teacher, (b) labeled or titled the picture "A teacher like…" or "Teacher is…" and (c) wrote a brief paragraph describing the picture and what it is intended to show. Utilizing a qualitative approach for data analysis, a category-classification scheme was used to identify the unitizing, categorizing, patterning, and comparing of responses. Each researcher analyzed the data separately and independently of each other. The majority of participants identified the role of the teacher as: (a) *Teacher as Transmitter*, knowledge is to be shared by the teacher; (b) *Teacher as Facilitator*, the teacher is a "guide" through knowledge; (c) *Teacher as Collaborator*, the teacher's role is one of transmitting and facilitating knowledge and learning; and (d) *Teacher as Mentor, Motivator, and Leader*, where the teacher nurtures student growth and knowledge. The researchers identified

three predominant metaphors - production, growth, and travel. Production metaphors displayed the teacher as a transmitter of knowledge whereas growth metaphors picture teachers as someone in pursuit of development or increased maturity. The travel metaphors depicted the teacher as a guide willing to take the students on a musical journey or expedition.

Isbell (2006, 2008) found preservice music educators received support and encouragement to pursue music education as a career from individuals during both primary and secondary socialization. Preservice music teachers ($N = 578$) from 30 institutions participated in the study. Isbell found that those who received positive feedback from family and teachers during primary socialization believed that the feedback contributed to their decision to pursue music education as a career. Participants indicated that the most influential individuals encouraging participants to enter a music profession included school music teachers (37%), parents (33%), and private music teachers (17%). Isbell further asked participants to rate (using a scale of 1 = extremely negative influences to 7 = extremely positive influence) the influence that parents, school music teacher, private music teacher, friends, or siblings had on their decision to pursue music education as a profession before entering college. Isbell found a positive or very positive influence from all the identified groups with school music teachers ($M = 6.32$) identified as the most positive influence followed by parents ($M = 6.02$). During primary socialization, all music experiences such as performing, peer teaching, private lessons, and conducting were very positive or somewhat positive. Preservice teachers with prior teaching experiences "found further validation in a range of musical, social, and teaching–related experiences" (2008, p. 175). Isbell suggested that experiences during

primary socialization had a positive effect on the decision to pursue music education as a career. Any negative feedback or experiences they may have experienced did not hinder participants' career decisions. During secondary socialization, preservice music teachers experienced positive support from nonmusic education and music education students as well as music education faculty and ensemble directors. Isbell concluded that the teacher and musician identities represent two distinct areas that do not seem to function in the same manner, and identified three identity constructs: (a) the musician identity, (b) self-perceived teacher identity, and a (c) teacher identity as inferred from others. The experiences of the individual, Isbell reported, were more influential in the development of identity than were influential people.

Brewer (2009) used a collective case study design to examine the relationship between effective teaching skills and role-identity development. The author examined the experiences of five preservice instrumental music teachers as individuals and as a group. Brewer collected data using interviews, observations, and artifact examination. The author followed participants through their preservice music teaching experience, their student teaching internship, and until the acceptance of a teaching position or the decision to secure other professions. Brewer found that music teachers developed role-identities and personal skills, teaching skills, as well as musical skills based on occupational goals and interactions with peers and other teachers.

Froehlich and L'Roy (1985) administered a questionnaire to 165 undergraduate music education majors, of whom 39 were randomly selected for follow-up interviews in order to examine occupational identity. Most of the participants reported that they had decided to pursue a music education career due to personal musical experiences and the

advice of a music teacher. During their secondary school experiences, many of the participants served as student conductors or teacher aides and had demonstrated aptitude in these roles. During participant interviews, the preservice teachers could not think of or intelligently discuss goals for music education. They could not accurately describe what they wanted to accomplish as individuals or what they believed music education should accomplish as a profession. When ranking occupational labels, professional performer emerged first most often, whereas music educator and musician tied as the second most frequently-ranked label. Band and choral students identified themselves more frequently as music educators than did students with a string instrument concentration. When asked to identify what music educators needed to know or know how to do, participant responses reported a focus on performance skills rather than the normal teaching skills of communicating with students, inspiring others, and the use of imagination. Froehlich and L' Roy found that participants did not possess a strong professional image of being a music educator regardless of their year of enrollment in a MTE program, but rather viewed the occupation professional musician as the top music occupation. The authors suggested that perhaps MTE programs did not aid in producing a professional image of a music educator to the undergraduates. Since there was no attachment by the participants to the image of a music educator, their commitment to the profession was lacking and their ability to define teaching skills and knowledge would remain indistinct. "If anything," they wrote, "the professional training seemed to have resulted in a shift from education to performance" (p. 70).

Conway, Eros, Pellegrino, and West (2010) pursued a self-study investigation into the role of interactions between undergraduates and graduate students in the development

of preservice music teachers and music teacher educators. The authors designed a self-study of experiences of undergraduate ($N = 34$) and doctoral students ($N = 3$). All participants maintained self-study journals, completed questionnaires, and underwent undergraduate interviews. The music education doctoral students served as teaching assistants, which involved assisting in the instruction of methods courses and observing the fieldwork of undergraduates. The authors held six self-study meetings to review the data. The authors found that undergraduates felt the doctoral students were friendly, helped establish a good class environment, and recognized and treated the undergraduates with respect. Undergraduates further described the doctoral students as sources of knowledge since they have had recent real-world teaching experience. Undergraduates specifically enjoyed the doctoral students' stories about recent teaching experiences, however, the undergraduates' views of the doctoral students changed as they matured through the program. The researchers reported lower level undergraduates viewed the doctoral students as faculty, where upper level undergraduates viewed them as students. The authors suggested that the interactions of the doctoral students and undergraduate students were beneficial in the development of both groups. Doctoral students provided undergraduates with a perspective oftentimes different from the college faculty. The doctoral students provided a bridge between the real world and theory for the undergraduates. The doctoral students reported that through conversations with undergraduates, they developed a better understanding of undergraduate concerns and their thoughts about teaching.

Sims, Bergee, and Kantner (2001) examined interactions between preservice music teachers and preservice visual arts teachers. The researchers sought to examine the

development of collegial relationships in cross-arts cohorts. Participants ($n_{art} = 35$, n_{music} = 49) from one of 17 cohorts comprised of four or five students each aimed to: (a) provide an opportunity for students in music and art teacher education programs to learn to work together and interact as colleagues, (b) assist students in developing understandings concerning the relationship of art, music, and other disciplines, (c) provide a direct experience with instructional techniques for students to model and incorporate into their classrooms, and (d) present opportunities for college students to discuss the relationships between the arts with elementary students. Participants attended three large group seminars designed to prepared cohort members to work together on written analytical assignments between the seminar sessions. At the first seminar, participants completed a questionnaire intended to gather information about their attitudes toward the arts disciplines, their attendance at arts events, interdisciplinary teaching, and their perception of their ability to articulate the role of arts in education. At the end of the semester, participants completed the same questionnaire as a posttest. The researchers also collected data via written and reflective assignments throughout the semester. Sims and colleagues reported that the responses of the art and music students demonstrated a lesser understanding of each other's activities and that participants were not prepared to engage in deep, reflective levels of discussion regarding their art forms. Neither group was aware of the materials studied in the other's discipline, they did not know how their curricular demands differed nor were they aware of how students had different approaches to aesthetic understandings of different art forms. Nonetheless, the participants responded positively to the seminars themselves and the opportunity of small group assignments.

Duling (2000) provided a close examination of the influence of mentor teachers on preservice music education student teachers ($N = 35$) and the perceptions of the mentoring teachers by student teachers. Participants from two state universities enrolled in a student teaching semester completed a researcher-developed mentoring questionnaire instructing them to identify persons they perceived as having mentored them to this point. Participants then identified, from a list of eleven categories, how they became associated with their mentors. The researcher asked the participants if each mentor contributed mainly to their knowledge of music content, pedagogy, or to both. The preservice teachers ranked each mentor to the degree of influence. Duling found that most preservice music teachers followed traditional patterns in mentoring relationships. That is, their own secondary school teacher, their teacher educators, and their cooperating teachers served as mentors. In addition, preservice music teachers appeared to develop the image of a model teacher and associated with them at an earlier age.

Conway, Micheel-Mays, and Micheel-Mays (2005) compared the perceptions about teaching and the personal lives of a music student teacher and a first year music teacher. Data sources were journals, observations, interviews, and written responses to the book *Life Cycle of a Career Teacher* by Steffy, Wolfe, Pasch, and Enz (2000). The book's authors provided the theoretical framework for the investigation and presented a model outlining three career stages that guided the investigation: novice, apprentice, and early parts of the professional stage such as early in-service teaching and growth in self-confidence as educators. Conway and colleagues found that the most prevalent themes involved time and personal exhaustion, the struggle to maintain a normal life, and that participants reported a sense of being silenced - a sense that their opinions or ideas were

valued by neither the cooperating teacher nor the in-service teachers. The two

respondents further reported a need for validation as educators and a sense of uncertainty

regarding job security or job searching suggesting a link between job security and job

retention for beginning teachers.

      Influence on choosing music as a career. In addition to the findings described

above, Bergee (1992a) also attempted to examine the reasons why preservice music

educators elected music education as a career. Bergee designed a questionnaire to

identify preservice music education undergraduates' sources of encouraging and

discouraging messages regarding their choice of major, attitudes about the music

education profession, attitudes regarding the undergraduate environment at their

institution, and their predictions regarding future professional efficacy. Among 96

undergraduate music education majors from three universities, Bergee found that 78% of

them decided to pursue a career in music education while in high school. Important

individuals such as family, friends, and peers provided mixed amounts of support for

pursuing a career in education. The strongest influence came from the participants' high

school music teachers. Bergee further reported that sixty-eight of the responses also

identified family, friends, and guidance counselors or other education professionals as

sources of disapproval on choosing music education as a career choice. Participants had

considered other careers including, music performance (50%) and teaching another

subject (40%). The remaining 10% of respondents considered careers in white-collar

professions. Few (7%) participants indicated a desire to begin their teaching careers in

urban areas, while nearly half (47%) wanted to teach in suburban areas with the

remaining indicating a desire to teach in a smaller city (35%) or rural area (10%). A

majority (60%) of the respondents reported that teachers are respected more in rural areas and 63% identified that respect related to the impact the teacher makes in the community.

Jones and Parkes (2010) examined the importance of identity and talent beliefs on career choice. Their investigation sought to examine why undergraduate music students ($N = 143$) choose a career in teaching classroom music—specifically how these reasons relate to their beliefs about their identification with classroom music, music performance, teaching talent, and performing talent. The researcher-designed instrument included 16 items designed to elicit information about participants' perceptions of music performance and music education. Jones and Parkes did not define these terms. The participants simply read the items and answered based on their individual perceptions and definitions of the terms. Questionnaire items focused on careers in music performance, identification with teaching classroom music, identification with music performance, talent in teaching classroom music, and talent in music performance and included an open-ended question - "If you are considering a career in music education, what are some of the main reasons?" (p. 44). Undergraduate music majors reported pursuing a career in teaching music ($M =$ 6.42) over a career in music performance ($M = 2.72$). In response to choosing a music education career, Jones and Parkes identified enjoyment, ability, career usefulness and identity as main themes. The researchers identified two main reasons students choose a career in music education: (a) it was part of their identity and wanted to become role models or like one of their former teachers and (b) the participants enjoyed music, teaching, and wanted to make music fun for their students. Of a lesser importance was their perception of their ability as a music teacher or the usefulness of a music-teaching career.

Gillespie and Hamann (1999) collected 153 responses on information relating to the recruitment of students into the string teaching profession via a researcher-designed survey instrument. The researchers designed the instrument to identify the students' profile by asking questions regarding anticipated graduation, immediate plans for teaching after graduation, primary instrument, and the amount of orchestra participation prior to college, influences on career choice, and recommendations for future recruitment of string teachers. The researchers found that the students enjoyed music, loved the sound of string instruments, viewed teaching as a rewarding profession, had a desire to work with children, and were influenced in choosing music by their high school or middle school orchestra director. Gillespie and Hamann suggested that orchestra teachers could help recruit future strings teachers by (a) serving as role models, (b) creating a positive learning environment, (c) demonstrating a love for teaching music, (d) allowing students the opportunity to conduct or teach, (e) discussing rewards related to teaching, (f) challenging students musically, and (g) taking a personal interest in those who express a desire to teach.

Building upon the research of Gillespie and Hamann (1999), Thornton and Bergee (2008) examined factors that may encourage string students to become music teachers. The authors developed a questionnaire regarding basic demographic information, career plans, and plans immediately following graduation. Participants returned 242 completed questionnaires with 63% coming from females and 34% from males. The highest number of responses by year in school came from participants in their fourth year (29%), then second year (27%), third year (22%) and finally first year (12%). In response to questions regarding career plans following graduation, 70% reported plans to teach immediately

after graduation, 13% planned to enter music or music education graduate programs, 4% indicated a desire to pursue performance or other music fields, while 5% reported they were planning to leave music completely due to military service, volunteer work, another profession or life choices. Half (50%) of the undergraduates reported high school as the preferred level to teach while 18% reported middle school and 11% indicated both high school and middle school as their primary choice. A preference for an elementary teaching position was selected by 12% of the responses. Half (51%) of the participants indicated a desire to teach band while a quarter (23%) wanted to teach choir, and only a tenth indicated a desire to teach orchestra (10%) or general music (9%). The researchers found that a majority (56%) of the participants remarked that important individuals, especially music teachers, were influential in their career choice decision. The lowest influence on career choice by response (6%) was parents. Thornton and Bergee analyzed responses to open-ended questions through the lens of the *Social Cognitive Career Theory* (SCCT). According to the researchers, teaching experience was the most prolific response for influencing future students to pursue a career in music education, but few of the participants reported having those experiences.

      Career goals/retention. Schmidt, Zdzinski, and Ballard (2006) examined career goals of undergraduate music education majors. Participants ($N = 148$) completed a three-part survey concerning career goals. The researchers used a questionnaire to gather information on academic major, current class level, major performance medium, sex, GPA, and SAT scores. Additional questionnaire items consisted of open-ended questions addressing career goals. Part 1 of the questionnaire included 5-point Likert items that measured self-concept in music, motivation variables, and personal development

competition. The researchers found that 69% of respondents selected public school music teaching as an immediate career goal, while 49% replied that it was a long-term career goal. Part 2 identified self-assessment on a hypercompetitive scale ("never true of me" to "always true of me"). Part 3 presented a locus of control scale. Preservice music teachers indicated that they might not be as competitive as the general undergraduate population. In regards to immediate and long term goals, 69.4% of the participants indicated their immediate teaching goal was to become a public school music teacher while 49.3% identified public school teaching and 14% selected college level teaching as long-term goals. Students identified personal success as the achievement of individual goals, mastery of challenging tasks, and collaboration with others. This success accompanied a strong musical self-concept. However, the preservice music teachers did not define their individual success as a function of extrinsic factors such as ego, competition, approach success, or wanting to avoid failure.

Hamann and Daugherty (1985) attempted to identify potential burnout symptoms of university music students ($N = 248$) using the *Malasch Burnout Inventory* (MBI) (Maslach & Jackson, 1981). The MBI was originally designed to assess burnout using three variables: emotional exhaustion, depersonalization, and personal accomplishment. Hamann and Daugherty reported that students with burnout identified variables such as: (a) lack of teacher recognition, (b) lack of personal goals and unclear university goals, (c) lack of coordination among the various areas of curriculum, (d) class relevance outside of music courses, and (e) work and family obligations. String concentration music education majors displayed the highest percentage of burnout and percussion players the lowest. Participants reported possible burnout factors that included a lack of recognition by their

peers, too many academic subjects, and not enough time to complete coursework or assignments.

In an attempt to address the attrition rates of undergraduates enrolled in MTE programs, Brown and Alley (1983) developed a predictive instrument to identify criteria for admission to a music education program. Freshmen and transfer students ($N = 201$) in their first term of declaring music education as their major were enrolled in a required course entitled "Orientation to Music Education." Using a multivariate analysis of the data, Brown and Alley found GPA was the most powerful predictor of student retention in the program and that 20% of music education majors drop their degree program between their freshman and sophomore years.

Kelly (2003, 2005) considered cultural factors and social/professional influences on preferences for initial teaching job placement. For the 2003 study, 406 music education undergraduate students from four large universities responded to a researcher-created questionnaire on personal cultural factors, such as race, family income, and the school size/setting/ethnicity they attended. Kelly found that most students preferred to teach in a school that was culturally similar to their personal backgrounds. For Kelly's 2005 study, 129 students responded to similar questionnaire items identifying social factors such as the population of their hometown, information on friends, family, community opportunities, peers, and professional factors including salary, program reputation, racial/ethical make up, and size of music budget. Kelly found that preservice undergraduate music majors were more likely to favor professional rather than social factors when deciding their initial job placement location.

Summary of individual focus. The preceding results presented an overview of the development of a MTE undergraduate as an individual. In this section, I identified twenty-four studies (Table 3.1) that examined the development of educational beliefs and values as a teacher/musician, the evolution and influences of developing a teacher/musician identity, positive and negative influences on choosing music education as a career, and their goals within music education as a career including placement preferences. Generally, the researchers found that preservice teachers related success to difficulty of a task and benefited from support and guidance of music faculty. During socialization, family members and music teachers served as primary influences in deciding to pursue a career in music education. Once completing the MTE program, preservice teachers preferred to teach in larger suburban school community or one similar to their own background experiences.

Table 3.1

Studies Reviewed Categorized as Individual Focus

Author	Purpose	Participants	Setting	Duration	Research Design
Asmus, E. P. (1986)	To determine the relationships between the causal attributions of music education and music therapy students' personal experience in music and school and their attribution of others' success and failure in music education and music therapy settings	($N = 143$) Undergraduate and graduate students enrolled in music education and/or music therapy programs	6 Institutions across the United States	1 Session	Correlational design
Austin, J. R. & Reinhardt, D. (1999)	To further examine preservice music teachers' philosophical beliefs	($N = 137$) Undergraduate music education majors	6 Institutions across the United States	2 Sessions	Correlational design

Bergee, M. J. (1992a)	To gather information on undergraduate music education majors' attitudes about certain aspects of the profession and perhaps uncover evidence of besieged or ambivalent feelings; to identify sources of negative messages aimed at undergraduate music education majors; to investigate undergraduates for a systematic tendency to elevate self over others	($N = 96$) Undergraduate music education majors	3 Major Midwestern universities	1 Session	Correlational design
Bergee, M. J. (1992b)	To develop a composite Missouri Pre-professional Teacher Interview (MPTI) theme by theme and total score profile of undergraduate music education majors and to examine the predictive validity of subjects' MPTI scores regarding high school class rank, Overall GPA, scores on the mathematics subtest of the American College Test (ACT), scores on the English subtest of the ACT, in and grade on applied performance juries	($N = 55$) Undergraduate music education majors	2 Major universities	1 Session	Correlational design

Brewer, W. D. (2009)	To examine conceptions of effective music teaching held by five preserves music educators and the influence of those conceptions on the participants' developing teacher role-identifies	(*N* = 5) Undergraduate music education majors	Single university	2 Years	Multi case study design using a symbolic interaction theory as a framework
Brown, A. & Alley, J. M. (1983)	To develop a predictive instrument and criteria for admission to the music education major as well as provide data-based guidelines for faculty-student interactions that might contribute towards student persistence of those students meeting university standards	(*N* = 201) First year freshmen and transfer students declaring music education as a major	Single major Southeastern State University	1 Session	Correlational design
Campbell, M. R. & Thompson, L. K. (2007)	To explore perceived concerns of preservice music education teachers across four different in professional development	(*N* = 1,121) Preservice music education students	16 Institutions in the United States	1 Session	Survey
Conway, C., Micheel-Mays, C. & Micheel-Mays, L. (2005)	To compare perceptions about teaching and the teaching lives of both the student teacher and a first year teacher working in two different music classroom settings	(*N* = 2) Student Teacher and a First Year Teacher	2 Different classrooms	19 Months	Case study design and narrative inquiry

Conway, C., Eros, J., Pellegrino, K., & West, C. (2010)	To examine the experiences of undergraduate and doctoral students involved in a variety of formal and informal interactions designed to facilitate community and both music teacher and music teacher educator development	($N = 38$) 34 undergraduate instrumental music education majors, 3 PhD students in music education, 1 music teacher educator	1 University	8 Months	Self study which included questionnaire, student interviews, focus group interviews, and journals
Duling, E. (2000)	To examine teachers' mentor influences and to focus upon student teachers' perceptions and descriptions of their mentors	($N = 35$) Music education majors student teachers	2 State universities	1 Session	Survey design
Froehlich, H. & L'Roy, D. (1985)	To investigate the occupational identity of undergraduate music education majors	($N = 119$) Undergraduate music education majors (39 randomly selected for interviews	Not specified	1 Session	Survey design with random interviews
Gillespie, R. & Hamann, D. L. (1999)	To identify teacher strategies for attracting school orchestra students to string teaching	($N = 153$) Undergraduate and graduate string music education students	17 Universities	1 Session	Survey design

Hamann, D. L. & Daugherty, E. (1985)	To assess potential burnout symptoms among university music students	($N = 284$) Undergraduate and graduate music majors	Not specified	1 Session	Correlational design
Isbell, D. S. (2008)	To investigate the socialization and occupational identity of undergraduate music education majors enrolled in traditional preservice teacher education programs	($N = 578$) Preservice music teachers	30 Institutions	1 Session	Correlational design
Isbell, D. S. (2006)	To investigate the socialization and occupational identity of undergraduate music education majors enrolled in traditional preservice teacher education programs	($N = 578$) Preservice music teachers	30 Institutions	1 Session	Correlational design
Johnson, C. M., Price, H. E., & Tafuri, J. (2002)	To investigate differences between Italian and United States participants in evaluating public school band directors	($N = 70$) Music education students in the United States and Italy	Single Italian Conservatory; Single 4-year United State university	1 Session	Experimental design

Jones, B. D. & Parkes, K. A. (2010)	To examine the reasons why undergraduate music students choose a career in teaching classroom music and how these reasons are related to their beliefs about their identification with teaching classroom music, identification with music performance, teaching talent, and performance talent	(N = 143) Music performance and music education majors	7 Universities in the United States	1 Session	Correlational design
Kelly, S. N. (2003)	To investigate the influence of selected cultural factors on the environmental teaching preference of undergraduate music education majors	(N = 406) Music education majors	Not specified	1 Session	Survey design
Kelly, S. N. (2005)	To investigate the extent to which specific social and professional factors may influence undergraduate preserves music education majors' decisions about an initial inservice teaching placement	(N = 129) Undergraduate music education majors	5 Universities in different geographic locations	1 Session	Experimental design

Kerchner, J. L. (2006)	To explore the nature of female music education students' psychosocial transformation from first year collegiate students to graduating perspective educators	(N = 6) Female undergraduate music education majors	Midwestern liberal arts college	4 Years	Ethnographic (Realist)
Legette, R. M. (2002)	To examine Attribution Theory in relationship to motivation and achievement as it pertains to preservice teachers	(N = 258) Undergraduate and elementary education majors	Research university in the southeastern United States	1 Session	Experimental design
Madsen, C. K. & Kelly, S. N. (2002)	To ascertain the salient aspects of initial experience that might affect decisions by individuals to pursue teaching as a career by isolating students' first remembered experiences of wanting to become a music teacher	(N = 90) Undergraduate music education majors	Large comprehensive school of music in the southeastern U. S.	1 Session	Mixed methods
McClellan, E. R. (2007)	To determine relationships among parental influences, selected demographic factors, academic achievement, adolescent self-concept as a future music educator, and the decision to major in music education	(N = 148) Undergraduate music education students	2 Institutions	1 Session	Correlational design

Reynolds, J. M. (2005)	To determine how preservice teachers' experiences in a content literacy course shaped their understandings about what it means to be a teacher	($N = 17$) Preservice secondary teachers from various discipline areas	1 Institution	1 Semester	Ethnographic (Case study)
Schmidt, C. P., Zdzinski, S. F., & Ballard, D. L. (2006)	To examine modification orientations and musical self-concept in relation to measures of academic achievement and career goals of preservice music teachers	($N = 148$) Music education majors	3 United States universities	1 Session	Correlational design
Sichivitsa, V. O. (2003)	To assess the influences of parental musicianship support and support in music, students' previous musical experience, self-concept of musical ability, value of music, academic integration, and social integration	($N = 154$) Choir students	1 University in the southern United States	1 Session	Correlational design
Sims, W., Bergee, M., & Kantner, L. (2001)	To examine the development of collegial relationships among music and visual arts preservice teachers	($N = 84$) Art and music education majors	1 University	3 evening seminars over the course of a semester	Experimental design

Thompson, L. K., & Campbell, M. R. (2003)	To explore the use of metaphors in preserves teachers' representations of themselves as teachers and their relationships to conceptions of practice	(N = 99) Music education students	1 Northeastern university	1 session	Grounded theory
Thornton, L. & Bergee, M. (2008)	To examine factors that may encourage strong students to become music teachers	(N = 242) Music majors	15 Institutions	1 session	Survey design

Development of Musicianship Skills and Error Detection

In the following section, I will examine studies ($n = 73$) that investigated undergraduate practice routines, perceptions of practice, practice strategies, the development of performance skills, error detection, aural skills, diction, evaluation of performances, and the development of undergraduates' conducting skills. The presentation order of the subthemes reflects the growth of the undergraduate student from development of specific musical skills to the investigation of undergraduate students' ability to assess those musicianship skills. The National Association of Schools of Music (NASM) board members identified the requirement for undergraduates to advance their proficiency as both a solo and ensemble performer as a core component of MTE preparation programs (National Association of Schools of Music Handbook, § 8.2, p. 87, 2010). To meet the musicianship skills for NASM accreditation, students must demonstrate:

a. Understanding of the common elements and organizational patterns of music and their interactions, the ability to employ this understanding in aural, verbal, and visual analyses, and the ability to take aural dictation.

b. Sufficient understanding of and capability with musical forms, processes, and structures to use this knowledge and skill in compositional, performance, analytical, scholarly, and pedagogical applications according to the requisites of their specializations.

In the subsequent paragraphs, I identified research focused on undergraduate coursework designed to develop general musicianship skills as described in the NASM guidelines.

The approach of undergraduates toward practicing. While examining intrinsic and extrinsic motivation for practicing among college instrumentalists enrolled in bands and orchestra ensembles at three public universities, Diaz (2010) found intrinsic factors including self-improvement and goal attainment served as practice motivation more than extrinsic factors such as grades. Participants ($N = 169$) responded to a 42-item researcher-designed survey instrument. Analysis consisted of the examination of data by discipline (strings, winds) and concentration (music performance or music education). Diaz found means for wind players' responses ($M = 20.32$) regarding competition were higher than mean scores of string players ($M = 16.68$). Diaz reported similar findings when comparing music education majors to music performance majors. According to the author, almost all participants responded highly on measures associated with task/mastery orientations suggesting undergraduate practicing focused on completing a task.

In a study investigating practice approaches and durations, of college music students, Kostka (2002) administered a questionnaire to 141 undergraduate and graduate music majors from 16 colleges and universities. Kostka posited that students viewed practice as necessary but aggravating and did not consider sight-reading to be an important skill. Similarly, due to the pressures of performance and jury preparation, participants reported that practicing repertoire was critical.

Miksza (2006) investigated the practice effectiveness of 40 undergraduate brass students. The researcher developed the *Music Practice Questionnaire* (MPQ) to collect

data on practice routines. Miksza reported several significant correlations in his analysis. The whole-part-whole practice strategy related significantly to the practice behaviors of repeating a section, repeating measures, and marking items in their music. The strategy of slowing a passage was related to repeating sections and repeating measures. The behavior of silent fingering/side position was indirectly correlated to the time spent playing during an experimental practice session. Miksza reported students needed to have practice strategies to better improve their performance skills. These strategies included, but were not limited to, whole-part-whole approach, marking items in the musical score, repetition of larger sections of music, and employing analytical techniques. The researcher further suggested that studio teachers should observe practice sessions and guide students on practice strategies and methods. Similarly, Troum (2010) examined: (a) relationships among social interactions, (b) competence, (c) goal orientation, and (d) task persistence during undergraduate students' practice sessions. Troum found a relationship between perceived strong support from their studio teachers and an ability to remain on task during practice sessions. Additionally, the participants' competence supported a relationship between autonomy support and task persistence.

Carter (2010) observed the practice effectiveness of 16 undergraduate clarinet players. Carter used a researcher-created instrument based on previous research (Duke, Simmons, & Cash, 2009) to evaluate video recordings of individual practice sessions. Carter identified the practice characteristics of tempo, error detection, and technique and found that 94% of students addressed errors immediately, 63% demonstrated thoughtful practice via silent moments looking at the music, singing/humming, or making notes, and 50% conceptualized material indicating that the student consistently aimed for

appropriate performance techniques (i.e., articulation, shape, grouping, dynamics). Subsequently, in a case study of 4 participants, Carter found that the two participants whose practice sessions that exhibited the highest number of effective practice characteristics had engaged in overt conversations with their studio professors about practicing in their lessons suggesting that students who discuss practice strategies with their teachers are more likely to apply effective practice strategies.

Research in practice effectiveness by Byo and Cassidy (2008) focused on time management. The researchers used self-report and observation methodologies to examine the practice room behaviors of 47 instrumental music education majors. Byo and Cassidy reported that many of the subjects used the same practice strategies, but implemented them in differing ways. For example, slowing the tempo to work on an isolated passage emerged as a common strategy. Although the shared strategy existed, individual approaches to the strategy varied. Some participants would slow the tempo considerably and then gradually increase the tempo to the correct performance tempo practicing the musical passage at various tempi until accurate. On the other hand, other participants would practice the musical passage using a slower tempo until accurate, then immediately return to performance tempo. Byo and Cassidy reported one difference was the participants' approach to the overall practice session. Some musicians reported isolating a section of music and working to perfect it for an extended period while other musicians in the study made quick adjustments and corrections as they progressed through the selection.

Additional research on undergraduate practicing explored the effectiveness of mental practice, physical practice, and modeling. Results on the use of utilizing mental

practice vary. In his 1985 study, Ross examined the effectiveness of mental practice of 30 trombone music majors from three institutions. Using a pretest-posttest control group design, Ross established five groups with assorted treatments (i.e., complete physical practice, complete mental practice, mental with simulated slide movements, combined physical and mental practice, and no practice). The author reported that a combination of mental and physical practice was as useful as using only physical practice. In a pretest-posttest design exploring intonation, Similarly, Hopper (2007) found that participants who applied a "sing and slide" practice strategy improved their performance.

Forty music education and music therapy students participated in a study (Coffman, 1990) exploring the effects of mental practice, physical practice, and the alternating of physical and mental practice on music majors' subject knowledge on piano performance. The researcher independently and collectively compared the three practice variables to no practice for 120 non-piano major participants. Similar to the findings of Ross (1985), Coffman reported that when compared to no practice, mental practice, physical practice, and subject knowledge were equally effective in improving piano performance.

Researchers examining the use of modeling as a practice skill have found similar results. Woody (1999, 2003, & 2006a) referenced modeling as a practice skill in studies examining the development of music expressiveness in undergraduate music majors. Based on the findings of these three studies, Woody claimed that aural modeling should be coupled with communication between the teacher and student (1999), instructors needed to provide specific comments while students listened to an aural model (2003),

and that aural modeling did not always contribute to major changes in a performance, but did consistently produce a performance similar to the aural model (2006a).

Woody (2006b) and Rosenthal, Durairaj, and Magann (2009) examined the development of musical expression while practicing. Woody investigated aural modeling, verbal instruction addressing musical properties, and verbal instruction using imagery and metaphors as teaching strategies to undergraduates on expressive performance. Woody's intent was to examine the cognitive aspects of imagery-based teaching. Quite simply, how do students interpret the images provided by an instructor? Participants were 36 college undergraduate and graduate level piano majors. Woody indicated that participants needed to accomplish mastery over the technical aspects of a composition before they would begin exploring expressive performance in music.

Rosenthal, Durairaj, and Morgan (2009) studied the self-described thought processes during practice sessions of 18 musicians at different levels of experience including professionals, music education majors, and high school students. The participants described their thought processes while practicing music expression in the context of a musical composition. Participants were video recorded during practice sessions and then asked to verbally explain their thoughts while reviewing the video with an investigator. Participants in all groups approached practice using methods that were analytical, experimental, and about discovery. Terminology used by participants often-depicted emotions such as defeat, frustration, pleasure, etc. Advanced players often verbalized more frequently and often mentioned identifying small goals throughout practice sessions.

Sheldon (2004b) focused on musical expression of listeners' ($N = 66$ undergraduate and graduate music education majors) ability to identify nuances of musical expression using figurative language and specific music terminology. Over a two-year time period, Sheldon asked undergraduate and graduate music education majors, in addition to 22 music educators, to identify analogies or metaphors they might include in instruction of expressive performance. Each individual provided five such examples. Four music education experts reviewed the compilation of the examples. The experts identified the top fifty submissions that best captured the essence of musical expression and nuance. After categorizing the submissions into a 44-item listening stimulus, Sheldon designed two tests to explore the use of language to describe the listening examples. The first test utilized figurative statements, such as "sounds like a child playing" or "like a fierce thunderstorm", as answer choices. Participants listened to randomized brief musical examples and identified the figurative language answer that best matched the style of the recording. Administration of the second test occurred several weeks later with the same participants and with nearly identical instructions. This test used the same randomized musical examples, but this time the answer choices were common musical terms and their definitions such as *scherzando*—whimsical or *feroce*—fiercely. Sheldon reported that when participants described musical expression of the examples (figurative language) they were successful in identifying only the intent of the example. On the contrary, when asked to identify the example's musical expression using musical terms and meanings, the accuracy levels dropped.

Rosenthal (1984) examined modeling by using guided model, model only, guide only, and practice only as treatment groups on musicians' ability to perform a musical

composition. In a single session, the researcher asked students if they had performed the selection before (no participant indicated that they had performed the selection prior to the study) and then asked participants to listen to the piece. Following the listening, participants were provided one of the four treatment models for their treatment group, given ten minutes to practice, then performed the selection again. Based on the data gathered from the 44 participants, Rosenthal found that the modeling techniques used during a practice session might influence a performance. Significant differences emerged for technical aspects of notes, rhythms, tempo, and dynamics but not in phrasing or articulation. Rosenthal reported that the guided model did not appear to improve the accuracy of a performance and that verbal instruction alone may not be any more beneficial than regular practice. Similarly, Rosenthal, Wilson, Evans, and Greenwalt (1988) reported that listening to an aural model appears to be as effective as practicing with an instrument. Rosenthal et al. also reported silent analysis had a positive outcome on the subjects' rhythmic performance ability.

I identified studies in the current synthesis in which researchers further investigated the use of technology in practice sessions (Sheldon, Reese, & Grashel, 1999) and skill transfer (Duke & Pierce, 1991). Sheldon et. al., examined the effects of live accompaniment, intelligent digital accompaniment (*Vivace*, now called *SmartMusic*), and no accompaniment on the solo music performance of 45 undergraduate instrumental music education majors. Five judges evaluated the performances in the areas of intonation, tone quality, rhythm, technique, interpretation, and articulation using the *National Federation High School Association Adjudication Form (Solo)* (National Federation of State High School Associations, 1999). The author found that the use of

accompaniment could be beneficial in a practice situation and may increase the probability of a successful performance. Similarly, Boyle and Lucas (1990) found that by providing a computer generated harmonic accompaniment to a sight-reading task, 30 music theory students improved their sightsinging ability.

Duke and Pierce (1991) investigated the effects of melodic context and tempo on the performance accuracy of a one-measure musical selection. The researchers examined the transfer of learning that musical selection into performances at assorted tempi with 27 undergraduate musicians. Participants learned each of the target measures by performing them at 80 beats per minute until a minimum performance criterion was met. Each musical selection was inserted into a three-measure phrase at various tempi by the researcher. The researchers found that the various tempi conditions and melodic content had a significant relationship to performance accuracy of the pre-learned musical selection. The authors further reported that pitch accuracy may also be influenced by tempo and melodic context. If a less difficult task or more difficult melodic context preceded the learned musical selection, the accuracy of the tempo of the learned musical selection was difficult to maintain.

Cassidy, Belts, and Hanberry (2001) investigated the use of structured left-hand piano practice on the sight-reading ability of undergraduate music majors. Non-piano music majors ($N = 40$) participated in the study. During the first week of the course, the researchers administered a pretest consisting of two harmonizations and two sight-reading tasks. As the course progressed, 20 participants received a treatment emphasizing left-hand tasks. The tasks included sight-reading examples consisting of left-hand melody on the bass staff and right hand accompaniments in the treble clef. The treatment group

continued to receive left-hand instruction such as performing the left hand twice as often as the control group. Using a four-way ANOVA with repeated measures, the researchers analyzed the data and reported a significant difference with posttest being more accurate considering effect of time, accuracy of rhythms, and accuracy of both the left hand and right hand. Cassidy and colleagues found an increased accuracy for the left hand when compared to the right hand for the pretest posttest for all participants, indicating the treatment had little effect on left-hand technique development.

Undergraduate aural skills instruction. Harrison, Asmus, and Serpe (1994) used a latent-trait model to examine the influence of musical aptitude, academic ability, music experience, and music motivation on the development of music theory students' (N = 142) aural skills. The authors discovered that musical aptitude, academic ability, and music experience served as a predictor variables for success in aural skills achievement. Moreover, they reported that motivation for music had no significant effect on aural skills achievement.

Humphreys (1986) investigated music majors' abilities to: (a) harmonize notated melodies and recorded melodies with chord symbols, (b) perform harmonic accompaniment, (c) measure the effectiveness of a harmonic audiation and performance training program, and (d) measure the predictive power of eight independent variables on harmonic audiation and performance skills. Humphreys collected data from 45 instrumental music education majors who received eight training sessions lasting 35 minutes each. Subtests for each variable occurred in pretest and posttest data collection. The training program consisted of materials to improve the ability of a participant to audiate and perform implied harmonic accompaniments. Humphreys found that the

applied treatment was effective in training the participants to audiate and perform harmonic accompaniments.

Many researchers (Beckett, 1997; Dalby, 1992; Pembrook, 1986a, 1986b, 1987; de Stwolinski, Faulconer, and Schwarzkopf, 1988; Sweetnam, 2007) have explored the implementation of various strategies intended to improve undergraduate music majors' ability to identify and dictate pitch intervals, chord qualities, melodies, and rhythms. de Stwolinski et al. investigated instructional activities and practice techniques of musicians aiming to improve their accuracy in detecting incorrect pitch errors. The researchers compared the results of undergraduates' studying examples using two strategies for detecting musical errors–keyboard sight-reading (Group 1) or listening to an example (Group 2) and their accuracy on detecting errors. Participants in the repeated measures study ($N = 59$) were randomly assigned to one of two groups, a sight-reading group or a listening group. Group 2 listened to a correct performance for preparation and the sight-reading group was permitted to play the piece on a keyboard. Both groups listened to four excerpts with four to five harmonic alterations inserted at logical points. The authors reported there was a significant difference between the effectiveness of sight-reading and listening as study strategies. Group 2 (listening) displayed better accuracy in determining harmonic errors when compared to the keyboard sight-reading group.

Pembrook (1987) focused on the development of aural skills and examined the effect of vocalization on melodic memory. Specifically, Pembrook investigated whether a difference in memory recall existed due to singing or not singing. Freshmen and sophomore music theory students ($N = 151$) were divided into three groups. Group 1 was presented with a melody and then immediately presented with a second melody and

instructed to identify whether the second melody contained the same notes as the first.
Group 2 had a similar task, though there was a 19-second pause before the presentation of
the second melody. Group 2 participants were then asked if the two melodies contained
the same notes or different notes. Group 3 was similar to Group 2 except following the
19-second pause; the participants heard a voice state "beginning pitch" followed by the
first pitch of each melody. After hearing the pitch, Group 3 members sang as much of the
melody as they could on a neutral syllable. Responses from each group were totaled and
compared using a one-way ANOVA. Groups 1 and 2 scores were significantly ($p < .05$)
higher than scores from Group 3. Only 67 of the 597 vocal responses were sung correctly
after one hearing. Pembrook reported that most people could not sing accurately enough
after just one hearing of a melody. It should be noted that some of the melodies were
atonal and contained tritones.

Sweetnam (2007) asked 14 undergraduate music majors to serve as participants
for an investigation into the application of the Aural Participation Procedure (APP), a
researcher-designed approach to note reading and learning. The APP was a five-step
process:

1. The participants sightread the music examples on the piano while they
audibly sang-along with the notes being played.

2. The participants read the music example again, but this time they
simulated the act of playing the same notes with the same fingering on
their lap while audibly singing-along with every note.

3. The participants repeated step one on the piano, audibly singing-along
with the notes played.

4. The participants executed step two on the lap once more, but this time by focusing their eyes on the piano keyboard or, if possible, attempted to visualize the layout of the keyboard. The participant was asked to allow the mind to follow while simultaneously coordinating all the aural, tactile, and visual factors to the best of his or her ability; if required, the participant could briefly look up at the score whenever a note or fingering uncertainty needed to be checked.

5. The participant played the music example on the piano entirely by memory.

The participants received six unfamiliar piano excerpts to read and learn while applying their own prior knowledge and the APP. The data showed two-thirds of participants who used the APP scored higher, albeit not significantly, on note accuracy suggesting the APP treatment had no effect.

Pembrook (1986a) explored the melodic dictation processes employed by undergraduate music majors. The purpose of this study was to examine the approaches (strategies) used by undergraduate music theory students when hearing the melody either once or multiple times for dictation. Participants ($N = 136$) were assigned to one of six treatment groups. Groups 1-3 heard the examples only one time while groups 4-6 heard the examples twice. All groups heard the first pitch of the melody, two seconds of silence, then two measures of metronome clicks. From this point, Groups 1 and 4 heard the melody and simultaneously dictated the melody. Groups 2, and 5 heard the example in its entirety and were provided time to dictate what they heard. Groups 3 and 6 heard the melody in its entirety, and received the starting pitch of the melody. Participants in

Groups 3 and 6 were then instructed to sing and dictate their melody. Pembrook reported in both the single and combined hearings, the three methods used did not have significant differences in accuracy of correct dictation results. Significant differences emerged between the three conditions. Participants who wrote while listening or wrote after listening were more accurate on the melodic dictation than those who listened, sang, or wrote only.

Beckett (1997) and Buonviri (2010) focused on the identification of effective dictation strategies. Beckett's participants ($N = 60$) applied one of three strategies: (1) isolation of rhythm first, (2) pitch first, or (3) a nondirected strategy during an aural dictation task. Beckett employed a two-way analysis of variance (ANOVA), one-way ANOVA, and a multivariate analysis of variance (MANOVA) to analyze data and found that during the rhythm-first condition participants' rhythmic accuracy rose significantly. Conversely, under the pitch-first condition, pitch accuracy was lower than the nondirected condition. Buonvin (2010) investigated the effectiveness of dictation strategies of using an aural only or aural with visual presentation of a melody. Each participant ($N = 41$) completed two self-contained experimental tests via computer. In the first test, participants were presented with an aural melody; and an aural melody with a visual representation during the second test. Using the results of a 2x2 ANOVA, Buonviri reported the visual reinforcement of melodies did not affect aural memory for pitch or rhythm.

Pembrook (1986b) and Dalby (1992) examined computer-aided instruction as a strategy for aural skill development. Pembrook distributed a 34-item survey to 75 sophomores to ask their opinions of both computer-aided and classroom instruction.

Participants responded on a Likert-type scale (strongly agree to strongly disagree). Participants received melodic dictation instruction via computer for one year and traditional classroom instruction the following year. Participants reported frustration with technical issues during the computer instruction and most (80%) did not view the treatment as favorable. Participants had positive experiences when a congratulatory message appeared on the screen and a fanfare played upon earning 100% on a tutorial and 31% reported the program provided more feedback than regular class instruction. Sixty-one percent of the participants expressed they would be interested in more encouragement from the computer program. Participants reported discouragement by the amount of cheating that was occurring during the computer-aided instruction.

Dalby (1992) examined the effectiveness of computer-based training on music teacher education students' ability to judge harmonic intonation. The researcher designed the program *Harmonic Intonation Training Program* (HITP) as the treatment. A pretest group of 176-music education majors completed the *Harmonic Intonation Discrimination Test* (HIDT). From this group, the researcher selected 20 participants for both control and treatment groups. Random assignment was not used but participants were two intact sections of a conducing course. The treatment group participants used the HITP. Based on a two-by-three ANOVA, Dalby found a difference ($p = .005$) in posttest score in favor of the experimental group, suggesting that the HITP could provide intonation training without the use of structured class time.

Performance skills/error detection. Hayward and Gromko (2009) as well as Elliott (1982) have posited that instrumental sight-reading is a multi-faceted skill. Hayward and Gromko reported that sight-reading involved the simultaneous demands of

visual, spatial, and aural processing and technical performing skills. Elliott examined the relationship of instrumental sight-reading and variables such as technical proficiency, rhythm reading ability, sightsinging ability, cumulative GPA, cumulative music theory GPA, cumulative jury performance GPA, and major instrument GPA. Elliot reported the best predictors for wind instrumentalists' sight-reading scores were rhythm reading ability and jury performance scores. The strongest skill most related to sight-reading ability was rhythm reading, while weak relationships were identified with GPA variables (e.g., overall GPA, education GPA, applied lesson GPA) except music theory GPA.

Investigations into the consistency of intonation accuracy for undergraduates' performance of intervals provided conflicting results. Duke (1985) showed the direction of undergraduate musicians performing isolated intervals influenced intonation. Ascending pitches tended to be sharp, Duke's conclusions bolster earlier findings (Shatzkin,1984). Others (Ballard, 2006; Cummings, 2007; Karrick,1998) found that interval performance was inconsistent between subjects. Ballard, Karrick, and Cummings all found that participant's primary instrument related to intonation accuracy. For example, Cummings identified that 16 violin players performed more accurately than did 16 flute players.

Students' chordal aural skill accuracy served as the focus of an investigation by Gibson (1988). Using tones generated by a Musical Instrument Digital Interface device, 51 music majors and 50 nonmusic majors listened to 22 pairs of chords displayed on a computer monitor. Participants identified which pair of chords sounded most alike. Gibson found that the proportion of correct responses from music majors and nonmajors were similar. Additionally, participants tended to choose the response items that appeared

on the left side of the computer screen more frequently than those responses appearing on the right side of the screen.

Geringer and Witt (1985) investigated undergraduate ear training and its relationship to tuning accuracy. High school and college/professional string musicians (*N* =120) served as participants for the investigation. Geringer and Witt randomly assigned participants to one of three groups. Once assigned to their groups, and during individual instruction, participants tuned to a pre-recorded tone. A professional oboe player provided the tones, performing tuning notes at 440hz, 25 cents sharp relative to 440hz, and 15 cents flat relative to 440hz. Participants were tested individually and were instructed to tune their "A" string to the provided pitch or to what they believed to be more accurate. Following the playback of the recorded pitch and the participants tuning, the participants were asked to judge the intonation of the tone as sharp/a little sharp, in tune, or flat/a little flat. Analysis included performance data, verbal responses (perception) and a comparison of verbal response with performance. The authors discovered significant differences on the performance variable (intonation) of the subject. Participants performed below the sharp pitch, above the flat pitch and in tune with the provided pitch 440hz. The college and professional participants performed sharper in response to the sharp pitch when compared to high school students. Verbal responses by both groups of participants revealed that the participants' perception of interpreted pitches were flat more frequently than they were sharp or in tune.

In conjunction with aural skill development, melodic dictation is a skill requiring musicians to transcribe a melody by ear. In a study exploring the success of the learning and performance of a melody by ear, Woody and Lehmann (2010) included two groups

of music majors ($N = 24$): (a) vernacular students (those who have learned by self, church, jazz, folk music) and (b) formal musicians (those learning in traditional music education settings). Data were gathered through performance mode (singing vs. instrument playing) and verbal thoughts of the performers. The authors found that singing required fewer trials than a performance on a primary instrument to achieve melodic accuracy. The vernacular musicians demonstrated significantly improved performances in their singing ability of a melody. Woody and Lehmann reported that the verbal comments of the undergraduate instrumental music majors focused on the physical aspects of producing the pitch and their playing technique, thus adding an additional step to the process and a possible reason for the need for additional performance trials. Verbal comments by the participants revealed that the most common strategies for success included the identification of melodic patterns and mentally rehearsing smaller sections of the melody.

Kostka (2000) explored the use of a score during error detection. Music undergraduates ($N = 69$) enrolled in piano classes were administered a sight-reading pretest at the beginning of the semester. Following the pretest, the researcher randomly assigned participants to one of three groups. Group A received error-detection practice plus shadowing (silently playing notes on top of the keys), Group B only shadowed, and Group C, the control, utilized self-guided practice. All three groups received five brief sight-reading sessions, but only Group A received treatment. The treatment consisted of five minutes of practice in error detection. The treatment involved participants listening to three repeated examples of the same pre-recorded piano piece while visually following a score. Participants were informed that there were no written errors, but they would hear

three mistakes present in the performance. Between each example, participants circled

errors. Following the listening, the instructor discussed the errors and provided correct

responses. Toward the end of the semester, analysis of a posttest administered to the

participants showed the shadowing-only group committed the largest number of errors

while participants utilizing self-guided practice achieved the fewest errors. Kostka found

no significant differences among the groups due to treatment. All three groups, however,

demonstrated improvement.

Lane (2006) examined the literature on undergraduate error detection skills with

access to the use or non-use of a musical score as a variable. Lane conducted two one-on-

one interviews with undergraduate music education majors ($N = 21$) to examine and

provide a holistic description of procedures and reflections of subjects' score study tasks.

Using the basic interpretive study methodology, Lane identified common trends or

themes and interpreted the results in the context of relevant literature. Participants were

divided into one of three educational experience levels: lower-level undergraduates ($n =$

6), upper-level undergraduates ($n = 9$), and student teachers ($n = 6$). Participants received

a music achievement rating consisting of overall GPA as well as studio teacher and

ensemble directors' ratings (high, medium, or low). During the individual interviews,

participants received a solo melodic excerpt arranged for their instrument and were

instructed to study it as if they were to perform the selection. Following the study period,

each student recorded the excerpt, reviewed the recording, and then completed a solo

evaluation form. The next step in the interview session required the participants to study

and prepare a score excerpt for full band. Following this study period, the participants

provided the researcher with a list of rehearsal priorities for the first week of a rehearsal.

The interview session concluded with a brief discussion of predetermined questions with each participant regarding his or her score study processes. Transcriptions of the videotaped interviews underwent a three-stage process for data analysis: (a) examination of overall amount of data, (b) review and analysis of topical content from the interview, and finally (c) recurring trends were identified and assigned into broad categories.

Based on the data, Lane theorized that the context of a musical style or name recognition of a composer did not influence score study procedures. Differences emerged in the participants' approaches to solo score study and ensemble score study. During preparation of the solo performance score, students spent more time and effort on audiation whereas in the full ensemble score preparation, the task emulated a decision-making process such as identifying possible complicated passages and establishing rehearsal priorities. Participants' experience level tended to increase the amount of specific terms and descriptions submitted to the investigator including expressive terms and discussion regarding the musical elements.

Performance evaluations. Several investigations of undergraduates' performance evaluation skills exist in which researchers have explored the relationships between evaluation and song preferences, the use of a musical score, and performance quality. Johnson and Geringer (2007), for example, investigated possible variables that could predict music majors' rating of a wind band performance. Eighty-four participants responded to six items addressing recording evaluations of known selections using a seven-point Likert-type scale. Reporting that their findings were similar to previous research, Johnson and Geringer revealed the participants awarded higher preference ratings for music with faster tempos. The researchers also found that music

expressiveness and tone/intonation were among the best predictors of wind band musical preference. Successful execution of music expressiveness and tone/intonation correlated with high marks for song preference. An additional investigation by Geringer and Johnson (2007) examined the effects of excerpt duration, tempo, and performance on evaluating a performance. The authors found that there were no significant effects for duration on performance ratings; however, professional recording ratings were higher at slower tempos and in duration than high school or university groups' performances.

Geringer and Johnson's findings echoed research conducted by Napoles (2009) who reported that university musicians rated professional group performances significantly higher than school groups. Napoles investigated whether the use, or non-use, of a musical score by university musicians ($N = 240$) would affect the ratings of choral performance excerpts. The participants were assigned to one of four groups: (a) all-scores group having a score for all musical examples, (b) scores 1 and 3 group only had access to a score for the first and third example, (c) the score 2 and 4 group had access to scores for the second and fourth score, and (d) a no score group. Each group listened to the same four recordings. Participants responded to each recording using a 10-point rating scale anchored by poor and excellent. Napoles reported that participants who did not have a musical score rated the performances lower than those with access to a score suggesting those without a score can be more critical with identifying performance errors. Napoles proposed that the use of a score may actually serve as a distraction from the performance.

Researchers (Hedden & Johnson, 2008; Hewitt, 2007; Hewitt & Smith, 2004; Kinney, 2009; Simmons, 2005) suggested that an undergraduate's experience as a musician and performance evaluation accuracy may be related. Kinney sampled

undergraduate non-music majors ($n = 63$), undergraduate music majors ($n = 42$), graduate students in music ($n = 17$), and music faculty ($n = 9$) and found that internal consistency for performance evaluation is related to experience level and training in music. Familiarity with the song repertoire also influenced internal consistency. Participants familiar with the music selections provided higher means for accuracy and expression.

Hedden and Johnson (2008) investigated the accuracy of preservice and in-service music teachers' experience on their ability to evaluate the pitch accuracy of young singers. Participants were freshmen and senior university students enrolled in one of two music education methods courses ($n = 31$), in-service teachers with no more than three years of teaching experience ($n = 17$), and in-service teachers with more than three years of teaching experience ($n = 17$). Participants listened to prepared recordings of elementary students containing in-tune and out-of-tune singing of the first nine pitches of *America the Beautiful* on a neutral syllable, assessing the pitch-matching accuracy of the singing for evaluation. Hedden and Johnson found that all three groups had an overall accuracy rate that ranged from 63 to 65%. Freshman participants responded more slowly to the stimuli than members of the other three groups. Each group was more accurate in their assessment of out-of-tune singers than in-tune singers; however, no overall differences in assessment accuracy between groups existed.

Similar to Hedden and Johnson (2008), Hewitt and Smith (2004) reported no statistically significant differences in performance accuracy evaluations by participants at multiple experience levels or by the participant's primary performing instrument family. The researchers utilized a causal-comparative design to examine the independent variables of teaching-career levels (in-service, upper-division undergraduates, and lower-

level undergraduates) and primary performance area (brass, non brass). The researchers employed seven subscales of the Woodwind Brass Solo Evaluation Form (Saunders & Holahan, 1997) as the dependent variables. It should be noted that the Hewitt and Smith study involved the evaluation of junior high brass performances and not ensemble recordings. In a later study, Hewitt (2007) reported that education level did reveal differences in evaluation accuracy in the performance subareas of tone, melody, rhythm, etc. Specifically, middle and high school students evaluated performances lower than college students.

Additional self-evaluation research conducted by Bergee (1993, 1997) and Bergee and Cecconi-Roberts (2002) examined differences in peer, faculty, and self-evaluations and small-group interactions on music performance. Bergee (1993) investigated the efficacy of peer and self-evaluation of applied brass jury performances. The performers were either graduate or undergraduate brass performance or music education majors. The author conducted a pilot study asking five university brass professors to evaluate ten randomly chosen brass performances. The same evaluators repeated this process the following year. The judges assessed the performances using the researcher-created *Brass Performance Rating Scale* (BPRS). The BPRS consisted of 27 items designed to assess brass performance that used a 5-point, Likert-type rating of strongly agree to strongly disagree with a neutral category. The student performers evaluated their performances and peer performances using the BPRS. Following analysis of the data, Bergee reported consistent agreement on factors describing musical effectiveness, tone quality/intonation, and technique. However, the researcher found a less consistent amount of agreement on a factor describing rhythm/tempo. Bergee further claimed that students demonstrated the

capability of a precise and honest evaluation of their peers' performance while finding

that the music students' *self*-evaluations correlated poorly with peer and faculty

evaluation (i.e., students tended to score themselves lower than peers or faculty).

Bergee (1997) replicated the prior study (1993) and extended the population to

include participants ($N = 19$) with majors in voice, percussion, woodwinds, and strings in

addition to brass. Participants were randomly selected from all music education

concentrations. The evaluation process was the same as the prior study with the exception

that the instrument implemented in this study was the *Music Educators National*

Conference Solo Adjudication Form (Music Educators National Conference, 1958).

Bergee found that the interrater reliabilities of faculty total and category scores were

uneven in comparison to the findings of his 1993 study. Student peer group total and

category scores were more uniform than those of the faculty, suggesting that peer

evaluations had integrity and correlated at least moderately, but often highly, with faculty

evaluations. Self-evaluations usually correlated poorly and at times negatively with

faculty and peer evaluations, but peer evaluations were generally higher than faculty

evaluation, findings consistent with the prior study.

Bergee and Cecconi-Roberts (2002) examined the effectiveness of small-group

peer interaction and peer feedback on students' ability to self-evaluate recorded

performances in two experiments. The first experiment involved 29 participants of which

15 were assigned randomly to the experimental group and the remaining 14 served as the

control group. The experimental group was further assigned to four subgroups of three to

five students based on brass, string, vocal or woodwind instrument concentration. During

a two-week period, each group met four times, during which students performed a solo

piece of their choosing. Each videotaped session was later viewed as a group. During the review of the videos, all participants discussed the performances and completed peer and self-evaluations. Evaluation forms were similar to those used in an earlier study (Bergee, 1997). Bergee and Cecconi-Roberts found that peer interaction, when combined with feedback, showed promise in improving the ability of subjects to self-evaluate. The second experiment included undergraduates (not utilized in the first experiment, $N = 56$) sorted into small (3-5 members) groups. Similar to the first experiment, participants performed a solo piece of their choice. In contrast to the previous experiment, the performances were conducted in front of one of the authors and were recorded for future evaluation. Following the authors' evaluations of the performances and a test of interrater reliability, the authors concluded that small-group interaction combined with peer feedback did not have a strong correlation with instructor evaluation nor did it have a strong effect on self-evaluation skills. Peer evaluation was again often higher than instructor evaluation.

Napoles (2008) explored the relationships among instructor, peer, and self-evaluations. However, instead of examining the evaluation of performances, Napoles compared evaluations of microteaching experiences between different stakeholders (i.e., instructor, peer, self). The author examined numerical ratings (overall teaching effectiveness scores) and specific verbal comments made by undergraduate music education majors ($N = 36$). Participants were assigned to one of three microteaching experiences: (a) teach a song by rote, (b) teach a listening lesson, and (c) teach a movement lesson in a general music methods or choral rehearsal techniques course over a semester. Following each teaching episode, all students provided written feedback and

assigned an overall numerical rating on a 10-point scale anchored by the terms ineffective (1) and effective (10). The researcher calculated mean ratings for each teaching episode so that each student had three ratings (instructor, peer, and self). Using Pearson correlations, Napoles found that instructor and self-ratings were consistently the lowest ratings while the highest correlations occurred between peer and instructor ratings. Self-comments made by participants after teaching were very similar in nature to peer comments, and after a one-week time period, most comments recalled by participants were those made by peers or both instructor and peers.

Simmons (2005) examined the impact of preservice music educators' wind instrument knowledge on their evaluation of wind instrument tone in a two-part experiment. A total of 115 undergraduate music education majors divided into two groups participated in the first experiment. Members from both groups listened to an eight-measure solo clarinet melody recorded in three tone quality conditions: poor, fair, and good. Group 1 listed the fundamental elements of wind tone production, rated the tone quality of the example, and wrote suggestions for improving the tone quality of the clarinetist. Group 2 rated the tone quality without providing suggestions for improvement or without listing fundamental elements of tone production. Part 2 of the study involved recordings of a trumpet melody. Following a similar format, the first group provided idiosyncratic elements for trumpet tone production, rated the examples and provided prescriptive elements for each example while the second group rated tone quality without providing descriptors for improvement. Simmons asked experts on both clarinet and trumpet to provide lists detailing fundamentals of tone production and prescriptive statements of improvement for each instrument. Simmons found that the ratings of tone

quality did not relate to the evaluators' knowledge of wind instrument pedagogy nor their ability to write accurate prescriptive statements directed at improving uncharacteristic sounds. In fact, for both the clarinet and trumpet melodies, each group accurately identified tone quality differences among the examples and was consistent in their accuracy rankings of the good versus poor tone quality examples.

An additional area of research initiated by music education researchers has focused on error detection in music performance, specifically looking into how, and how well, undergraduates detect errors in tone, rhythm, and timbre. Byo (1993, 1997) explored how texture, when combined with timbral factors, influenced the ability of music majors to detect errors. Music majors ($N = 60$, undergraduates $n = 20$) received scores for 20 excerpts and circled errors during the playback of a recording. Participants detected rhythm errors more often than pitch errors. Byo suggested that in performance evaluation, a rhythm-pitch hierarchy exists. The examination of this hierarchy would be a focus of the 1997 study in which Byo paired one-, two-, or three-part texture settings with pitch and rhythm errors. Participants ($N = 105$) listened to a recording and identified errors in pitch and rhythm while reading notated scores. Participants correctly identified fewer than 50% of all errors and again, rhythm errors were more accurately identified than pitch errors. Significant relationships emerged on the main effects of degree level (graduate students were more accurate than undergraduates), texture (participants were most accurate in one-part settings), and error types (rhythm more so than pitch errors).

Crowe (1996) conducted additional research in the use of musical scores during error detection tasks. Crowe placed 30 undergraduate music students into 4 score study groups: (a) no score study, (b) study with score, (c) study with correct aural example, and

(d) score study with use of a keyboard. Participants responded to 31 test examples and used a computer's mouse to identify the instrument part, measure, and the specific note they believed to be incorrect. The examples included one to three lines of music. Crowe reported that participants who had access to scores and aural examples were more effective in error-detection and there were significant differences in test scores attributable to the number of staves in each example. As the number of staves increased, the number of attempted (not correct or incorrect) answers increased.

Sheldon (2004a) examined the ability of 90 undergraduate music majors (brass and woodwind instrumentalists) to detect errors made in a performance context across multiple listenings of band excerpts. The researcher created 12 musical scores and recordings with 120 errors. Error types included articulations, dynamics/balance, intonation, pitch, rhythm, and tempo. The participants' response rate for accurate errors was greater during the first listening than the second and third. The most correct responses occurred in the upper two voices, while the least number of correct responses occurred in the bass voice. Primary instrument type was not related to error-detection identification or labeling accuracy.

Conducting. The development of conducting skill is a requirement for the National Association of Schools of Music (NASM) accreditation of music teacher preparation programs (NASM § 9.3.b.1, 2010). Despite the clear language found in the NASM Handbook, relatively few researchers have systematically examined the role of conducing in music teacher education programs. Scott (1996) investigated the effects of visual diagnostic skills on the acquisition of basic conducting techniques. Study participants (N = 36) enrolled in a basic conducting class were randomly assigned to one

of two treatment groups. Using a pretest posttest design, Scott asked all participants to complete a 29-item written pretest in which they identified conducting errors while viewing a videotape of conducting examples taken from the Videotape Conducting Lesson Series (Froseth, 1978). The video series contained videotaped lectures on the elements of conducting. A second portion of the pretest required the participants to be videotaped while conducting a performing ensemble. Over the course of the next five weeks, one group viewed a series of videotaped lessons containing instruction and demonstration of conducting techniques while an experimental group viewed the same-videotaped lessons and completed a diagnostic procedure. The procedure involved each participant evaluating technical errors and providing feedback for each conducting example using a multiple-choice format. Following the treatment period, both groups completed the same instrument used in the pretest and were again recorded while conducting a live ensemble. Based on the results of a $t-$ test, Scott found that both groups demonstrated improvement over time. Outside evaluators assessed the participants' conducting videotapes and the evaluators' mean scores were used in an ANCOVA analysis. The researcher found that only the use of the left hand for gestures demonstrated a significant difference. Therefore, a curriculum that included diagnostic skills did not result in greater conducting skill than a curriculum that did not include diagnostic skill training.

Running (2009) created an interdisciplinary conducting instruction method and then examined the instructional effectiveness of the method on undergraduate music majors. Specifically, Running examined the impact of the conducting method on young conductors' musical expressiveness, comfort, and gesture accuracy. Participants ($N = 33$)

assigned to either a control group or an experimental group received two 50-minute class

sessions of conducting instruction and two 15-minute sessions of conducting instruction

over a two-week period. The experimental group members received training in several

acting-based exercises. Members of the control group participated in no acting-based

exercises. Data collection occurred via a questionnaire administered to participants before

and after the treatment. An expert panel evaluated each subject's videotaped conducting

session for expressiveness, gesture accuracy, and comfort level for each performance.

Based on the analysis of the questionnaire data Running found that neither group

experienced a change in their comfort level in reaction to their conducting. However, in

regards to performance of conducting gestures, both groups displayed significant gains.

Furthermore, both groups experienced improvement in their knowledge of beat patterns.

Running suggested that the experimental method created for the study and traditional

methods allowed equal student growth.

Aubin (2010) investigated the effects of assorted sequences of instruction in

undergraduate conducting. Thirty music undergraduate students were assigned evenly in

two groups and received specific sequences of instruction, which were designed by the

researcher. Group 1 received a sequence of instruction that included the Laban

Movement Theory followed by instruction of conducting patterns, while Group 2

received instruction in the Laban Movement Theory concurrent to instruction of

conducting pattern. Laban's theory examined a series of practical movement exercises for

the body aimed to developed stylistic artistry through creative movement; included

techniques for exploring space; explained body movement potential; and related

conducting movements to musical expression. Each participant conducted and videotaped

the same two musical excerpts. Three conducting instructors viewed the videotapes and

evaluated participants by completing Seddon's (2007) *Conducting Rating Instrument*.

Aubin found no significant differences ($p = .05$) in facial, gestural, or overall expression

between groups. The lack of significant difference between groups suggested that

beginning conducting students might implement instruction based on the Laban

Movement Theory without affecting their facial or gestural expressions.

DeCarbo (1982) examined the effects of conducting experience and instruction

delivery method on the error detection scores of undergraduate instrumental music

students ($N = 35$). DeCarbo sought to design two different instructional methods using

the same content, which provided instruction in error-detection. The researcher evaluated

the effectiveness of the two formats in developing error-detection skills. The first group

of participants, labeled as the conducting experience group, received traditional

conducting experience and instruction over the course of 16 class sessions. The second

treatment group, identified as the programmed materials group, utilized the same

materials and content but the information was prerecorded via videotape and presented

during class instruction in the programmed format. At the conclusion of the treatment

period, each group completed two posttest measures in the forms of a written exam and a

conducting exam. DeCarbo found that training in error-detection utilizing programmed

instruction did not transfer to a conducting situation as well as the traditional, in-class

live instruction model. Moreover, DeCarbo discovered that participants with conducting

experience scored significantly higher ($p < .01$) than participants receiving only the

programmed materials, but no significant differences between the groups on the written

examination existed suggesting that delivery of instruction via a traditional model or

programmed model may be effective in materials related to nonconducting situations such as score study and score reading.

Other researchers interested in exploring conducting instruction have examined beginning conductors' gesture development (Byo, 1990; Powell, 2008; & Trevino, 2008). Byo investigated whether high and low contrasts in conductor intensity, such as the differences in attentiveness, attitude, gestures, etc., could be demonstrated by beginning conductors and whether untrained observers could identify those contrasts. To accomplish this, Byo created a intensity-contrast videotape. Next, participants ($N = 25$) enrolled in an undergraduate conducting class received instruction specific to competencies under investigation (e.g., left hand cues, etc) and included live instructor modeling of high and low contrasts. The third phase included creation of a pilot study in which each participant performed four, 15-second scripted conducting episodes that demonstrated high-low contrasts. Subsequently, the class viewed the videotape of the one-minute episodes and labeled each 15-second micro episode as high or low intensity. Phase 4 involved the creation of a second videotape using the same approach. The final phase required an independent observation of 320 new participants divided into four groups according to age and experience. The group members were high school band/choir students, graduate music students, undergraduate music students, and nonmajors. The final phase provided data for analysis. Observation scores (correct responses) were compared across groups. Following two ANOVAs, Byo reported that both high and low conductor intensity is recognizable across diverse experience levels, but graduate music majors were more accurate in identifying intensity contrasts.

Seddon (2007) developed a criterion-reference rating instrument for the evaluation, teaching, and training of undergraduate conductors. The *Conducting Rating Instrument* (CRI) included evaluations of several conducting areas (i.e., posture, baton grip, preparatory gesture, ending gesture, pattern, left hand, cues, facial expression, and gestural expression). Two panels of three judges (6 total) each evaluated video examples of student conductors using the CRI. Based on reliability analyses, the researcher established that each judge was consistent within him or herself (.95), but the interjudge reliabilities were moderate to low. Seddon revised the CRI and conducted a second trial and found improvement in many of the ratings and in interjudge reliabilities. Seddon concluded that it is possible to develop a rating instrument that contributed to consistent and accurate judgments of multiple levels of conducting.

Powell (2008) investigated the effects of Elizabeth A. H. Green's conception of psychological conducting on the ability of undergraduates to communicate through gesture. Powell defined the psychological conducting exercises as the process of getting a group of singers or players to respond, on a single pitch throughout, to the messages it receives from the conductor's hand and baton alone. Students from two sections of an undergraduate conducting course, one acting as a control group ($n = 16$) and the other section as the treatment group ($n = 16$), served as participants for the investigation. Materials were organized and presented in the same manner except the treatment group wrote and conducted psychological conducting exercises as part of the course curriculum. For the pretest and posttest, each participant conducted the same four musical excerpts with their classmates performing. The conducting episodes were video recorded and a group of evaluators independently rated the videotapes using the researcher-created

Conducting Ability Measure. Following a repeated measures ANOVA Powell concluded

that no significant differences in the total overall mean gain scores of either the control or

treatment group existed. Although the treatment group demonstrated higher mean scores

in left hand, beat-pattern, dynamics, articulation, phrasing, and expressive parameters

compared to means of the control group, these differences were not statistically

significant.

Trevino (2008) investigated the use of an aural model and score study on the

conducting gestures of undergraduate music majors. After employing a purposeful

sampling procedure, Trevino assigned undergraduate music majors ($N = 30$) into a

control group ($n = 15$) and a treatment group ($n = 15$). Trevino designed a procedure to

introduce an aural model into a score study procedure. Participants in the treatment group

listened to an aural model and then followed a musical score while listening to the aural

model. Next they completed independent score study and conducted the score twice, once

with an aural model and once without. The control group followed a similar procedure,

though they did not have access to an aural model. Following the treatment period, three

expert observers evaluated the participants' videos using the *Expressive Conducting*

Achievement Measure, created by the researcher. Following data analysis, Trevino found

that students who used an aural model while conducting during the study period showed a

much higher performance mean score than the control group subjects.

Some researchers have been interested in the impact of cognitive skill on

conducting. Chaffin (2009) examined the cognitive workload (attentional resource

allocation) associated with conducting of an instrumental music performance context

(i.e., the use of conducting gestures and aural analysis as individual variables but also in

conjunction as a whole-task process). Chaffin measured 15 participants' attentional resources using a primary task performance (whole task), which consisted of both gesture and aural analysis over a unit of study in an undergraduate conducting class. The participants completed four stages of evaluation: (a) whole task one, (b) gesture-only, (c) aural analysis only and (d) whole task two. Participants received isolated instruction on the gesture component and the aural analysis. The four conducting episodes were video recorded and analyzed by the researcher. The researcher employed the NASA Task Load Index (Hart & Staveland, 1988) to measure participants' perceptions of their mental and physical workload as well as their frustrations and perceived level of success during each of the conducting episodes. Chaffin uncovered a significant decline in participants' attentional allocation with regard to aural analysis during dual-task episodes. Participants reported higher levels of frustration and stress during the beginning of the study, with the most significant success at the end of the study.

The examination of conducting achievement and attitude served as the focus of an early investigation (Price, 1983). Price examined the effect of conductor academic task presentation, reinforcement, and student performance on attentiveness, achievement, and attitude of members of a university symphonic band. The 48-member group, comprised primarily of music majors, participated in a pretest (sight-reading of the compositions) and one of three treatment sessions. Treatment 1 included directions on where to begin playing followed by a performance. Treatment 2 included an academic task presentation followed by directions then ensemble performance, while treatment 3 included the same directions as the previous treatment but adding conductor reinforcement. Finally, each group completed a posttest (final performance). Two video recorders were in each

performance. One focused on the conductor and the other on the six participants. Following the experiment, two trained observers viewed the videos independently and recorded student off-task behavior and teacher eye contact. Results from data analysis revealed that treatment consisting of teacher directions, student performance, and conductor feedback was the most efficient for improved performance as it resulted in the largest musical gains and the highest student attitude ratings.

Roebke (2005) examined the effect of specific nonverbal conducting elements on student perceptions of teaching effectiveness in a classroom rehearsal. Participants ($N = 101$) viewed two researcher-scripted teaching rehearsals and evaluated each episode using the researcher-created *Perception of Teacher Effectiveness Measure*. The first script, labeled by the researcher as the Nonverbal Exhibitor, showed the researcher as conductor in front of an ensemble. In the script, the conductor demonstrated the verbal description of the desired musical responses with simultaneous demonstration of the nonverbal conducting gestures. For example, the conductor provided a verbal description of the meter while showing the conducting pattern. In the second script, the Nonverbal Inhibitor, the researcher provided only a verbal description. Roebke reported that music education majors rated the nonverbal exhibitor model as being more beneficial than the nonverbal inhibitor in evaluating teaching practice. Participants evaluating the nonverbal exhibitor reported an overall teaching effectiveness mean score significantly ($p < .01$) higher than the mean scores of participants evaluating the inhibitor condition.

The purpose of a study by Morrison, Price, Geiger, and Cornacchio (2009) was to investigate whether listeners' evaluations of identical ensemble performances would differ between high- and low-expressivity conducting conditions. Morrison and

colleagues based their work on the previous work of Byo and Austin (1994), who described expressive conducting as related to (a) right arm and hand, (b) left arm and hand, (c) facial expression, and (d) body movement. The conductors received a rubric defining low- and high-expressive conducting. The authors assigned each conductor to conduct one example using high-expression and another low-expression. Two graduate wind-conducting students provided the researchers with footage to construct a stimulus tape. The audio portion of the recording video was erased and replaced with a high-quality wind ensemble performance. Music theory students ($N = 118$) served as evaluators and rated the expressivity of each conductor and the ensemble performance using a 10-point Likert-type scale with low (1) and high (10) ratings. Morrison et al. reported that the expressivity of the conductor had a significant effect on how the evaluators rated the expressivity of a musical performance. Specifically, performances containing high expressive conducting segments received higher ratings than those with low-expressive conducting despite the fact that the audio was the same for each performance.

   Summary of musicianship skills and error detection. The development and examination of musicianship skills emerged as a dominant area of investigation among preservice MTE research. In the studies reported in this section ($n = 47$), researchers investigated the development of musicianship and performance skills. After reading each of the studies, I believe that these studies revealed undergraduates perceived practicing as a necessary task and were intrinsically motivated. The application of practice strategies, accompaniment of some type, and discussions with studio professors regarding practice improved the practice efficacy . Moreover, I posit that research into the performance

evaluations conducted by preservice music teachers indicate that instrumental preference did not influence performance evaluation, peer ratings were relatively consistent, undergraduates identified rhythm mistakes more than other music elements, and multiple listening responses did not increase accuracy. Finally, despite the interest in conducting research, investigators have yet to identify an obvious methodology to most effectively and efficiently teach conducting skills, be it score study or gestural. A summary table of studies included in this section can be found in Table 3.2.

Table 3.2

Studies Reviewed Categorized as Musicianship Skills

Author	Purpose	Participants	Setting	Duration	Research Design
Aubin, M. W. (2010)	To investigate the effects of different sequences of instruction on conductor expression in a Laban Movement Theory-based beginning, undergraduate conducting class	($N = 30$) Undergraduate music majors	1 University	Semester	Correlational design
Ballard, D. L. (2006)	To examine perceptual and performance intonation achievement	($N = 60$) Undergraduate wind instrument majors	Not Specified	Not specified	Correlational design
Beckett, C. A. (1997)	To examine undergraduate music majors' strategies in two-part dictation		Not Specified	3 Sessions	Correlational design

Bergee, M. J. (1993)	To explore the efficacy of peer and self-evaluation of applied brass jury performances	(*N* = 18) Undergraduate brass musicians	5 Universities	1 Year	Correlational design
Bergee, M. J. (1997)	To replicate and extend procedures used in the first investigation into the applied areas of undergraduate voice, percussion, woodwinds, strings, and brass	(*N* = 19) Music education majors	3 Institutions	1 Session	Correlational design
Bergee, M. J. & Cecconi-Roberts, L. (2002)	To explore the effectiveness of small-group peer interaction combined with sharing of peer feedback on students' ability to self-evaluate their recorded performances	(*N* = 29) Music education & music performance majors	1 University	2 Week period	Correlational design

Boyle, J. D. & Lucas, K. V. (1990)	To compare college students' ability to sight sing tonal melodies in two contexts	($N = 30$) Undergraduate music students	1 University	2 Sessions	Experimental design
Buonviri, N. O. (2010)	To determine how pitch and rhythm aspects of melodic memory are affected by aural distractions when melodic stimuli are presented both visually and aurally, as compared to aurally only	($N = 41$) Undergraduate and graduate music majors	1 Northeastern university	2 Sessions	Experimental design
Byo, J. L. (1990)	To determine whether high and low contrasts of gestural intensity could be demonstrated by undergraduate beginning conductors and furthermore whether independent observers could recognize these contrasts	($N = 320$) Music majors & nonmusic majors - All Levels	2 Large comprehensive universities and 1 urban university	1 Session	Correlational design

Byo, J. L. (1993)	To investigate the effect of textural and timbral factors on graduate and undergraduate music majors' ability to detect performance errors	(N = 60) Graduate & undergraduate music majors	1 Institution	1 Session	Correlational design
Byo, J. L. (1997)	To examine graduate and undergraduate music majors' ability to detect pitch and rhythm errors in one-, two-, and three-part settings of texturally contrasting music excerpts	(N = 150) Graduate & undergraduate music majors	2 Southern universities	1 Session	Experimental design
Byo, J. L. & Austin, K. (1994)	To devise and test a script methodology by which to document the nonverbal behaviors of conductors in the rehearsal setting, and compared the nonverbal repertoire of six novice and six expert conductors of university bands.	(N = 12) Novice and experienced wind band conductors	1 University	6 Sessions	Experimental design

Byo, J. L. & Cassidy, J. W. (2008)	To obtain survey and observation data concerning music education majors' practice room behavior	(N = 47) Undergraduate music education majors	1 Southern university	1 Session	Mixed (survey/interview)
Carter, A. B. (2010)	To observe practice characteristics demonstrated in the practice sessions of 16 undergraduate clarinetists, and examine the relationship between those characteristics and the activities each student experienced in a preceding private lesson	(N = 16) Undergraduate clarinetists	1 University	2 Sessions	Ethnographic (Case study)
Cassidy, J. W., Betts, S., & Hanberry, M. A. (2001)	To examine the effect of structured left hand practice on performance accuracy of harmonization and sight-reading tasks among music majors	(N = 40) Non-keyboard music majors	1 University	1 Semester	Experimental design

Author	Purpose	Sample	Setting	Duration	Design
Chaffin, C. R. (2009)	To examine subject attentional resource allocation during performance of the multitask operation of conducting, where multiple cognitive and kinesthetic tasks are performed concurrently	(N = 15) Undergraduate music majors	1 Midwestern university	1 Semester	Correlational design
Coffman, D. D. (1990)	To examine the effects of types of practice and aural knowledge of results on improving piano performance	(N = 80) Undergraduate and graduate music education majors and music therapy majors	1 Midwestern university	1 Session	Correlational design
Crowe, D. R. (1996)	To examine the effects of four score study styles on the pitch and rhythm error-detection abilities of beginning conducting students	(N = 30) Undergraduate students	3 Midwestern universities	1 Session	Experimental design
Cummings, P. C. (2007)	To examine the effects of instrument type, stimulus timbre, and harmonic context on tuning	(N = 32) Collegiate flautists and violinist	1 Midwestern university	1 Session	Experimental design

Dalby, B. F. (1992)	To determine the effectiveness of a computer-based training program for improving students' ability to make judgments of harmonic intonation	($N = 176$) Undergraduate music education majors	1 Midwestern university	1 Session	Correlational design
DeCarbo, N. J. (1982)	To design two different approaches that would provide training in error-detection skills for college undergraduate instrumental students; administer the materials to a sample of these students under experimental conditions; and evaluate the effectiveness of the two formats in developing error-detection skills	($N = 33$) Undergraduate music majors	2 Universities	16 Class sessions	Experimental design

Diaz, F. M. (2010)	To gather and compare information on measures of intrinsic and extrinsic motivation among instrumentalist enrolled in collegiate ensembles	($N = 169$) Undergraduate and graduate instrumentalist	3 Southeastern universities	1 Session	Survey design
Duke, R. A. (1985)	To examine intonation patterns concerning melodic and harmonic musical intervals compared to equal temperament	($N = 48$) Junior high, senior high, and college students	1 State university	1 Session	Experimental design
Duke, R. A. & Pierce, M. A. (1991)	To examine the effects of melodic context and performance tempo on the ability of advanced-level instrumentalists to perform previously learned music passages in novel settings	($N = 27$) Graduate and undergraduate music majors	1 Southern university	1 Session	Experimental design

Elliott, C. A. (1982)	To investigate the relationships among instrumentalists sight-reading ability and seven selected variables	(*N* = 32) Undergraduate music theory students	1 Southeastern university	1 Semester	Correlational design
Geringer, J. M. & Johnson, C. M. (2007)	To investigate the effects of listening example duration on the musical evaluation of wind band performances	(*N* = 96) Undergraduate and graduate music majors	3 Universities in the United States	1 Session	Correlational design
Geringer, J. M. & Whitt, A. C. (1985)	To investigate the tuning performance and tuning perception of string instrumentalist	(*N* = 120) High school and college students/ professionals	1 Southern university, local high school orchestra, local professional orchestra	1 Session	Experimental design
Gibson Jr., D. B. (1988)	To determine the aural significance of the octave equivalence assumption	(*N* = 101) Music majors and nonmusic majors	1 University	1 Session	Experimental design

Harrison, C. S., Asmus, E. P., & Serpe, R. T. (1994)	To investigate the relationships of selected background variables with achievement in college freshmen music theory coursework	(*N* = 142) Music theory students	Not Specified	10 Semesters	Correlational design
Hayward, C. M. & Gromko, J. E. (2009)	To examine predictors of music sight-reading ability	(*N* = 70) Wind players in concert bands	1 Midwestern university	1 Session	Correlational design
Hedden, D. G. & Johnson, C. (2008)	To investigate the effect of preservice and practicing music teachers' experience on time and accuracy of assessing young singers	(*N* = 55) Music education students and experienced music teachers	1 Midwestern university	1 Session	Correlational design
Hewitt, M. P. (2007)	To examine the impact that education level and primary performance instrument have on the evaluation of music performances	(*N* = 423) Middle school, high school, and college musicians	1 University and its surrounding area	1 Session	Correlational design

| Hewitt, M. P. & Smith, B. P. (2004) | To examine the influence of teaching-career level and primary instrument on music teachers' assessment of music performance | (N = 150) Music education students and inservice teachers | 1 University | 2 Years | Correlational design |
| Hopper, G. L. (2007) | To begin the investigation of determining whether or not performing from memory improves intonation on trombone | (N = 27) Undergraduate and graduate trombonist | 1 University | 1 Session | Correlational design |

Humphreys, J. T. (1986)	To test music majors' abilities to harmonize notated melodies and recorded melodies with chord symbols, and to perform harmonic accompaniments to recorded melodies, measure the effectiveness of a harmonic audiation and performance training program, and measure the power of eight independent variables to predict various harmonic audiation-performance abilities	($N = 45$) Music education majors	1 University	8 Weeks	Correlational design
Johnson, C. M. & Geringer, J. M. (2007)	To explore possible influences of specific music elements on the prediction of overall musical evaluation of band pieces	($N = 84$) Undergraduate music majors	3 Large universities	1 Session	Correlational design

Karrick, B. (1998)	To examine intonation trends of experienced wind instrumentalists with regard to harmonic intervals	(*N* = 16) Professional and student wind instrumentalist	1 University	1 Session	Experimental design
Kinney, D. W. (2009)	To examine the effects of music experience and excerpt familiarity on the internal consistency of performance evaluations	(*N* = 63) Graduate and undergraduate music students and faculty	2 Universities	1 Session	Correlational design
Kostka, M. J. (2000)	To compare three methods of teaching keyboard sight-reading to undergraduate music majors	(*N* = 69) Undergraduate music majors	1 Southwestern university	1 Semester	Experimental design
Kostka, M. J. (2002)	To examine the expectations and attitudes toward practice by studio music teachers as well as those of college-age music students	(*N* = 268) Studio teachers and undergraduate/graduate music majors	16 Colleges and universities	1 Session	Survey design

Lane, J. S. (2006)	To provide a holistic description of procedures and reflections of undergraduate instrumental music education majors in music score study tasks	(*N* = 21) Undergraduate music education majors	1 Southeastern university	2 Sessions	Ethnographic (Case study)
Miksza, P. (2006)	To investigate relationships among impulsiveness, locus of control, sex, observed practiced behaviors, practice effectiveness, and self-reported practice habits	(*N* = 40) College brass players	1 Midwestern university	2 Sessions	Correlational design
Morrison, S. J., Price, H. E., Geiger, C. G., & Cornacchio, R. A. (2009)	To examine whether a conductor's use of high-expressivity or low-expressivity techniques affected evaluations of ensemble performances that were identical across conducting conditions	(*N* = 118) Music theory students	1 Pacific Northwest university	1 Session	Correlational design

Napoles, J. (2008)	To investigate relationships between instructor, peer, self-evaluations	(*N* = 36) Undergraduate music education majors	1 Western university	3 Sessions	Correlational design
Napoles, J. (2009)	To determine whether viewing a musical score while listening would affect musicians' ratings of choral performance excerpts	(*N* = 240) Undergraduate and graduate musicians	1 Western university	1 Session	Correlational design
Pembrook, R . G . (1986a)	To examine the approaches used during the stimulus presentation period in both single and multiple presentation settings	(*N* = 136) Music theory students	Not Specified	1 Session	Experimental design
Pembrook, R. G . (1986b)	To compare college students' opinions of computer-based melodic dictation instruction and classroom instruction	(*N* = 75) Music theory students	1 Southeastern university	1 Session	Survey design
Pembrook, R . G . (1987)	To examine methods for reinforcing melodic memory	(*N* = 153) Music theory students	1 Southeastern university	1 Session	Experimental design

Powell, S. R. (2008)	To determine the effect of psychological conducting on the conducting abilities of students in a beginning undergraduate instrumental course	(*N* = 32) Undergraduate music majors	1 Midwestern university	2 Sessions	Experimental design
Price, H. E. (1983)	To examine the effect of conductor academic task presentation, reinforcement, and student performance on attentiveness, achievement, and attitude of members of a university symphonic band	(*N* = 48) Symphonic band members	1 Northeastern university	4 Weeks	Experimental design

Roebke, J. P. (2005)	To examine and analyze the effect of specific non-verbal behaviors on music education majors' perceptions of teaching effectiveness in the classroom environment of the ensemble rehearsal	(*N* = 101) Instrumental Music education majors	4 Universities	1 Session	Experimental design
Rosenthal, R. K. (1984)	To relative effectiveness of four modeling conditions on instrumentalists' musical performance	(*N* = 44) Undergraduate and graduate music majors	1 Midwestern university	1 Session	Experimental design
Rosenthal, R. K. (1985)	To provide a description and analysis of the behavioral changes a group of perspective teachers underwent as they attempted to modify their teaching using behavioral self-assessment	(*N* = 14) Music education majors	1 Midwestern university	1 Semester	Experimental design

Rosenthal, R. K., Durairaj, M., & Magann, J. (2009)	To analyze the language used by participants to explain what they were thinking and doing while practicing the expressive aspects of a musical composition	(N = 18) High school students, undergraduate music education students, and professionals	Not Specified	1 Session	Mixed methodology
Rosenthal, R. K., Wilson, M., Evans, M., & Greenwalt, L. (1988)	To examine the relative effects of five practice conditions on instrumentalists' performance of musical composition	(N = 60) Undergraduate and graduate music students	1 Midwestern university	1 Session	Experimental design
Ross, S. L. (1985)	To investigate the relative effectiveness of mental practice in improving trombone performance through a pilot study designed to compare five different methods of practice	(N = 30) College music majors	3 Midwestern universities	1 Session	Experimental design

Running, D. J. (2009)	To investigate the effects of a method designed to enhance novice conductors' musical expressiveness	(*N* = 33) Undergraduate music majors	1 Midwestern university	4 Sessions	Correlational design
Scott, D. E. (1996)	To investigate the effects of the development of visual diagnostic skills on the acquisition of basic conducting techniques	(*N* = 36) Undergraduate music majors	1 Midwestern university	5 Weeks	Experimental design
Seddon, J. T. (2007)	To develop and implement a criteria-specific rating instrument that accurately assessed levels of achievement among undergraduate students of beginning conducting	*(N* = Not Specified) Music education, composition, performance, and industry majors	1 Northeastern university	1 Session	Experimental design

Shatzkin, M. (1984)	To identify ascending intervals with a distracter tone either a major second or a perfect fourth below and preceding the first tone of the interval, a distracter tone either a major second or a perfect fourth above and following the second tone, and with no distracter	($N = 36$) Music majors	Not Specified	1 Session	Correlational design
Sheldon, D. A. (2004a)	To investigate the effects of multiple listenings on error-detection identification and labeling accuracy	($N = 90$) Undergraduate music education majors	2 Universities	1 Session	Experimental design
Sheldon, D. A. (2004b)	To identify nuances of musical expression using figurative language and specific music terminology	($N = 66$) Undergraduate and graduate music education majors	Not Specified	Several weeks	Experimental design

Sheldon, D. A., Reese, S., & Grashel (1999)	To investigate differences in performance-quality ratings among college-aged instrumentalist grouped in three solo preparation conditions	(*N*= 45) Undergraduate music education majors	1 University	1 Session	Experimental design
Simmons, A. L . (2005)	To determine if a relationship exist between evaluations of tone quality and knowledge of wind instrument pedagogy	(*N* = 115) Undergraduate music education majors	5 Universities	1 Session	Experimental design
de Stwolinski, G., Faulconer, J., & Schwarzkopf, A. B . (1988)	To evaluate instructional activities and practice techniques of musicians attempting to improve their accuracy in detecting errors in music	(*N* = 59) College music majors	2 Universities	1 Session	Experimental design

Sweetnam, P. (2007)	To investigate the application of aural participation while note reading and note learning six unfamiliar music excerpts	(N = 14) Undergraduate music majors	1 University	1 Session	Experimental design
Trevino, A. R. (2008)	To determine if the use of an aural model during score study would increase the amount of expressive gesture exhibited by a conductor	(N = 30) Undergraduate music majors	4 Universities	1 Session	Correlational design
Troum, J. F. (2009)	To investigate the goal orientation of undergraduate applied music students and its relation to self-efficacy and task persistence	(N = 366) Undergraduate music students	6 Southern universities	1 Session	Correlational design

Troum, J. F. (2010)	To investigate the relationships among undergraduate applied music students' perceptions of autonomy support, competence, and task persistence	(*N* = 366) Undergraduate music students	6 Southern universities	1 Session	Correlational design
Woody, R. H. (1999)	To examine the performance of expressive dynamic variations by advanced pianists in a aural modeling performance task	(*N* = 24) Undergraduate musicians and faculty	Not Specified	1 Session	Correlational design
Woody, R. H. (2003)	To examine musicians' expressive performances in an aural modeling task, paying special attention to the skills of goal imaging and motor production	(*N* = 25) Undergraduate music students	Not Specified	1 Session	Correlational design

Woody, R. H. (2006a)	To compare the effectiveness of three approaches used to elicit expressivity in music students' performances	(*N* = 36) Undergraduate and graduate music majors	1 Midwestern university	1 Session	Correlational design
Woody, R. H. (2006b)	To address the cognitive processes of musicians using imagery to improve expressive performance	(*N* = 84) Undergraduate and graduate music majors	1 Midwestern university	1 Session	Correlational design
Woody, R. H. & Lehmann, A. C (2010)	To explore the differences in ear-playing ability between formal and "classical" musicians and those with vernacular music experience	(*N* = 24) Undergraduate music majors	1 Midwestern university	1 Session	Experimental design

Preservice Music Teacher Instruction

Based on my synthesis of the research in MTE, I identified a third main theme –

studies relating to preservice music teacher instruction. I found 106 studies in which

researchers investigated several subthemes including

- the learning process of preservice teachers

- methods courses, technique courses

- the use of technology

- diversity

- lesson planning

- teaching strategies/effectiveness

- field experience/student teaching

- the evaluation of others teaching

- self-evaluation of their teaching.

In the following pages, I will present the studies in an order that reflects the

undergraduate curriculum. First, an evaluation of how the undergraduate learns, the basic

skill acquisition methods courses, followed by the courses involving fieldwork. In the end

of this section, I will discuss research examining the evaluation and reflection of

teaching observations and teacher assessment. I based the classification of the research

into these categories on the specific course requirements and content required for MTE

programs to earn NASM accreditation. The NASM (2010) Handbook states in Section

IX:

> In addition to the common core of musicianship and general studies, the musician
>
> electing a career in school-based teaching must develop competencies in

professional education and in specific areas of musicianship. Professional education

components should be dealt with in a practical context, relating the learning of

educational principles to the student's day-by-day work in music. Students must be

provided opportunities for various types of observation and teaching.

Within the curricular guidelines above, attention should be given to

breadth in general studies, attitudes relating to human, personal considerations, and

social, economic, and cultural components that give individual communities their

identity. (pp. 97—98)

Learning process. Several researchers have examined higher-order thinking

skills, relationships between academic performance and music, sources of knowledge,

and learning styles. Sheldon and DeNardo (2005) investigated the higher-order thinking

skills of prospective freshmen ($n = 116$) and upper-level music education majors ($n =$

130) in an observation task analysis. Participants viewed a videotaped performance and

were instructed to write as much as possible regarding their observations. The researchers

analyzed responses for descriptive and inferential content. Statements of inference

weighed more heavily with accuracy, earning five points while an inaccurate description

receiving a five-point deduction. In regards to accuracy of observation task, accurate

description earned one point and an inaccurate description earned a one-point deduction.

Sheldon and DeNardo used a one-way ANOVA and found that preservice participants,

compared to prospective freshmen, demonstrated a greater ability to describe and infer.

The authors noted that some of the preservice participants demonstrated weak descriptive

and inferential skills while some prospective students demonstrated strong skills.

Furthermore, there was a significant difference in response accuracy in relation to

experience level as junior-level students demonstrated a greater accuracy. Sheldon and DeNardo suggested that the knowledge and details regarding the video task provided by upperclassmen came from the coursework and microteachings they experienced as part of their training.

Duling (2010) conducted research on the possible relationships between music and academic achievement for undergraduate music majors. Thirty-four preservice music education students enrolled in a general music methods class served as participants. Students developed kinesthetic analogues (KA), which are body movements used to demonstrate the elements of form, pitch, and rhythm. The KA's were performed as a peer teaching experience, recorded, and evaluated by independent judges. Judges assigned a rating using a five-point scale (lowest to highest) in terms of how the KA's reflected the music elements of pitch, rhythms, and form. The researcher used participants' ACT scores and GPA's for academic data and analyzed the scores for correlation relationships. Duling revealed significant relations between form and pitch ($p < .001$), form and rhythm ($p < .001$), form and ACT score ($p < .05$), as well as form and GPA ($p < .05$). Moreover, participants who scored high on the quality of their KA, also reported high college GPA's and ACT scores.

Haston and Leon-Guerrero (2008) explored the possible influences on preservice instrumental music teachers' acquisition of pedagogical content knowledge (PCK). Six preservice students enrolled in student teaching participated in the qualitative case study. Each participant completed the same sequence of methods courses involving lecture-based teaching, peer teaching, and field experiences. Each participant designed, implemented, and recorded a lesson at their student teaching location. The researchers

then viewed the individual recordings of teaching episodes and identified incidents of

PCK for discussion with participants in future interviews. During the interviews,

participants watched the predetermined PCK example and responded to questions such

as: (a) Why did you stop the rehearsal, or what were you trying to accomplish? and (b)

Do you recall where you learned that pedagogical technique? The researchers then

categorized participants' responses into either intuition, apprenticeship of observation,

methods courses, cooperating teacher, or other. Haston and Leon-Guerrero did not

identify a single source of indisputable PCK, but apprenticeship of observation, strategies

discussed in methods courses, and a student's cooperating teacher were each reported

twice as sources of PCK. Haston and Leon-Guerrero reported a strong contextual element

to sources of PCK, such as the participants' instrumental training.

Campbell (1999) examined the use of collaborative ethnography as an approach

to research in music education. The researcher used this design to explore the interaction

of theory and practice by examining how 43 music education majors learned to teach

elementary general music. Participants took part in a teaching practicum course that

included teaching an elementary general music class for one hour each week for a

semester. Data collection included student work required for the course such as journals,

reflections, observations, electronic and researcher field notes, and feedback from

videotaped observations. The author identified several emergent themes, which showed

that: (a) novice teacher's beliefs are highly socialized around the culture of performance,

(b) novice teachers tended to construct identities from their involvement with music and

becoming a musician, (c) the content of methods courses affects students' beliefs and

images while engaged in a practicum, (d) participants discussed how they want to be

perceived as teachers, and (e) these beliefs interacted and do not remain static. Campbell found that participants' perception of music teacher identity centered on performance. Participants focused their attention on developing their skills as a musician not a teacher, are often not told how to teach, and needed to establish themselves as an authority in the classroom.

Methods courses. Hamann and Ebie (2009) sought to determine whether participants in music education methods courses believed the method courses provided them with the necessary training to address their teaching concerns (e.g., teaching in or out of their perceived area of expertise). Participants ($N = 159$) enrolled in assorted introductory music education courses, music education methods courses, and conducting courses completed a three-item, free response questionnaire. The researchers found that preservice students hoped music education courses would provide them with a solid foundation to teach in all music teaching disciplines and provide them the proper tools for effective teaching. Students enrolled in the music education courses believed themselves to be confident that they would be prepared to teach in their area of perceived expertise, but not outside of their area of expertise.

Other researchers interested in methods courses have examined improvisation training (Della Pietra & Shehan Campbell, 1995), authentic-context learning (Paul, Teachout, Sullivan, Kelly, Bauer, & Raiber, 2001), and the use of student–written cases (Hourigan, 2008). Della Pietra and Shehan Campbell used pretest and posttest inventories and verbal "think-alouds" to investigate how two music education students processed improvisation as musicians and teachers, its relationship to analytical listening, and options for integrating improvisation into the curriculum. The authors believed, based

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upon their collected evidence, that the development of improvisational skills was possible and the ability to teach improvisation to others could be taught during a methods course. Specifically, with proper training, students could: (a) conceive musical improvisation as model-based and linked to the teachers' design of strategies for analytical listening; (b) recognize the pedagogical importance of listening, teacher demonstration, and student imitation; (c) accept the three-part structure to class improvisation (listening, collaboration, performance/evaluation); and (d) assist other students in socially interactive ways to solve individual improvisation tasks or problems. Both participants demonstrated learning through working with peers and that the improvisation training resulted in a variety of developmental processes triggered by the ideas of others within a group.

Paul, Teachout, Sullivan, Kelly, Bauer, and Raiber (2001) explored relationships between the frequency of authentic-context learning (ACL) activities during preservice student learning and the initial teaching performance (ITP) of undergraduate student teachers. They gathered using the *Survey of Teaching Effectiveness* (STE) (Hamann & Baker, 1996) to evaluate ITP videos of 30 undergraduate instrumental music students who taught large high school ensembles. The number of viewings students had of their teaching with feedback from an instructor did not significantly relate to ITP. However, when the ITP was compared with scores from the STE, participants that had a higher number of ACL experiences scored higher on their ITP than those with fewer ACL experiences. The researchers found that undergraduate students who experienced a higher number of ACL experiences were significantly better teachers than those undergraduates with fewer ACL experiences.

Conkling (2003) investigated preservice teachers' reflective thinking during a 15-week period of their professional growth. Five third-year undergraduate students participated in the collective case study while at a professional development site. Conkling examined field notes from observations, analyzed online journals, and completed periodic unstructured interviews with the participants. The author used pattern analysis to group items thematically and then completed an item analysis. Based on the analysis, Conkling suggested that a common core of teaching tools including influential models, sources for useful feedback, and rehearsal strategies exists. Through the item analysis, Conkling found that participants' reflections were more flexible and artistic rather than technical and that preservice teachers viewed the process of learning to teach as complex and rigorous, similar to the process of learning to perform musically. As such, the participants tried to negotiate the process of learning to teach as they have learned to perform by: (a) looking for expert models, (b) rehearsing or problem-solving between lessons or classes, and (c) seeking out other practitioners for useful feedback and support.

Killian and Dye (2009) examined the effects of learner-centered reflective practice model activities in preparation of music teachers. In this longitudinal study, the researchers followed 43 undergraduate music majors through three semesters of peer teaching, field experiences, and student teaching. The researchers used the reflective practice model, a learner-centered model that emphasizes self-evaluation and professional responsibility, rather than traditional instructor grading and feedback, as the framework for the study. The researchers designed a plan/teach/archive/reflect procedure for both peer and student teaching episodes. Each episode was video recorded and supplied to the

participant for viewing and reflection on delivery, pacing, and overall teaching effectiveness. The reflections were to be in the form of open-ended questions, or a Likert-type questionnaire. Killian and Dye reported that undergraduates preferred reflective practice to the traditional lecture and test format, they believed their teaching had improved, planning was valued by all, and that age and teaching experience appeared to affect self-evaluation. As students progressed through college, they tended to rate themselves higher each semester based on improvement in a general comparison to previous years.

Using a qualitative comparable case study methodology, Hourigan (2008) studied the use of student-written cases as part of an instrumental methods course. The research questions included an examination of the positive and negative issues associated with using the cases and how five participants perceived the value of case writing as part of the methods course. The undergraduates read two case examples and wrote a single case based on a personal high school band experience. Researcher feedback focused on context, interactions, analysis, and lesson focus. Participants revised and submitted a final draft for further feedback. The author reported difficulty in remaining nonbiased in his feedback to the participants, but reported that all participants agreed that the case writing experience was a positive exercise for a methods course. All of the participants reported that case writing fostered reflection on past teaching experiences. Hourigan further added that the student-written cases, in concert with his feedback, assisted preservice music teachers in exploring ideas and activities for student learning in their future classroom instruction.

Instrumental and vocal technique courses. Music education teachers hope that technique courses isolate specific instrument families or vocal skills and provide preservice teachers with sufficient knowledge and ability to perform and teach all instruments or vocal groups. Russell (2007) sought to examine and describe factors that influenced preservice music education students' investment in instrumental technique courses. Using three teaching assistants and three undergraduate music majors as participants, Russell conducted three formal interviews with each participant, analyzed class artifacts, and observed a percussion techniques class, which was the only techniques course in session during data collection. Russell found that undergraduates were more likely to have an increased investment in technique courses if they are able to accept new information that may be contrary to prior knowledge. For example, a flute player who has had no experience on a brass instrument would benefit from a brass technique course. Or, as two participants involved in student teaching experiences stated, they realized how the skills from the technique course could have improved their teaching experience by being able to address fundamentals on assorted instruments and not just their primary instrument. An additional finding was that peer influence affected an undergraduates' investment in a technique course.

Later, Russell (2009) examined the possible impact of environmental factors on music majors' investment in instrumental techniques courses taught by graduate students. Participants ($N = 6$) underwent three interviews and observation in a technique course as the researcher took on the role of research observer. Factors influencing investment of students included: (a) direct involvement by a faculty member, (b) access to appropriate resources, (c) rigorous assessment, (d) a well-prepared course instructor with appropriate

background, and (e) a flexible course content. Undergraduates identified the following basic characteristics or requirements for graduate student instructors: extensive teaching experience, high facility on multiple instruments, high professional status, and high teaching confidence. Russell also suggested that undergraduate participants did not have overall positive expectations with graduate assistants who served as instructors.

Three dissertation authors (Amoriello, 2010; McArthur, 2007; & Mutschlecner, 2007) investigated preservice teachers perceptions of methods courses. Amoriello examined piano proficiency expectations from the institution and student perspectives. The researcher collected data as a participant observer and coded participants' critical reflections. Amoriello identified recurring themes such as (a) balancing individual and group consultations, (b) the role of music making, (c) importance of the students' responsibility for learning, (d) curricular concerns, (e) connection of piano and theory courses, (f) the dominant role of the piano proficiency exam, (g) and the need for a clearer definition of piano proficiency. Amoriello identified a need for clarification in the requirements and expectations of undergraduate music teachers' ability to demonstrate proficient piano skills.

McArthur (2007) explored secondary preservice music teachers' thinking in regards to reading, reading content, and their relationship in the context of a university methods course. Using constructivist theory as a framework, the author examined assorted assignments by participants collected throughout a semester from methods courses. The primary theme that emerged reflected reading as a transaction. Students additionally reported, "music is playing the game", or "reading for school is getting through it." McArthur concluded when literacy was embedded in a constructivist

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curriculum, students are engaged learners, that curriculum should include authentic experiences, and should also address preservice teachers' theoretical orientations of reading within the content area, the curriculum required a practicum and/or field-based experience as part of the methods course.

Mutschlecner (2007) studied instrumental techniques involved the construction, validation, and a diagnostic of a cello playing technique for undergraduate cellists. Thirty cello students (music education majors, $n = 6$) completed: (a) a written test to assess fingerboard geography, defined as the knowledge of pitch location on the fingerboard while playing and the understanding of pitch relations to each other, (b) a playing test to measure the participants' technique skills needed to perform, and (c) a self-assessment form allowing students to describe experiences, areas of interest, and performance goals. Based on the written test, Mutschlecner reported no significant differences due to the level of experience or if the participant was a music major or minor. Students with prior piano experience performed better on the written exam when compared to students with no piano experience. Mutschlecner offered three additional findings. Prior piano experience had a significant ($R^2 = .15$) direct relationship with the results of the playing test. The playing assessment was a good predictor of teacher ranking of students' technique. The number of years in school, degree program, and years of playing experience were not significant predictors of performance ability.

Instruction using technology. Investigators have examined the use and benefits of using technology in the instruction of undergraduate music courses designed to develop musicianship skills, distance music instruction, eye contact, and the use of electronic portfolios. Cremata's (2010) investigated the use of music technology in two

universities' courses. Qualitative methods of data collection included interviews, field observations, and artifact collection. Cremata reported a lack of integration of music technology into required music education courses. Required technology courses focused on Musical Instrument Digital Interface (MIDI), digital accompaniment, or using notation software. For one site, a required technology course offered through the College of Education was not music specific. Furthermore, at the examined sites few opportunities for students to explore music technology or to develop methods for incorporating it into their future teaching existed.

Researchers interested in computer-aided instruction for undergraduates have compared computer versus traditional instruction (Dekaney, 2003), the recognition of music concepts (Hopkins, 2002), and online/distance learning (Riley, 2009). Dekaney investigated the effect of computerized versus classroom instruction on instrumental undergraduate students' ability to correctly pronounce words phonetically transcribed into the International Phonetic Alphabet (IPA). Participants ($N = 63$) completed a pretest of samples from the IPA proficiency exam and were then assigned into one of three groups: (a) class instruction involving three forty-five minute sessions, (b) computer-assisted instruction using the software *Sounds of English* (Duranmu & Sergay, 1998), and (c) class and computer-assisted instruction which received both treatments as described above. Dekaney reported all three groups earned higher scores but identified significant differences among and within the three groups. Participants in the computer-assisted group reported frustrations with the limitations of the interactions with the *Sounds of English* software. Specifically, the software did not provide real words and sentences as examples, rather only the IPA symbols.

Hopkins (2002) compared the effectiveness of computer-based expository and discovery methods of instruction on the aural recognition of selected concepts. The researcher designed two versions of computer-based instruction software, titled *Theme and Variations* (TAV). The first software version utilized an expository method (EM) of instruction and the second version used a discovery method (DM) of instruction. EM sequence of instruction provided (a) definitions of concepts, (b) examples, and (c) practice exercises. The DM instruction sequence included (a) examples, (b) practice exercises, (c) opportunities to verbalize discovery, and (d) definitions of the concepts. Each version included four lessons, one for each variation and the versions were identical in presentation except for one item. The DM version welcome screen identified each variation as type 1-4 whereas on the EM version, the screen provided the actual type of variation. Twenty-seven participants completed pretest, posttest, and retention tests. The DM group spent more time working with the software compared to the EM, however, no significant difference emerged between the two groups on total time in instruction. Hopkins reported that both methods of instruction aided in fostering the aural recognition of the musical concepts and the ability to define the concepts verbally, but neither offered a significant benefit over the other.

Incorporating video conferencing into music teaching may serve as a way for researchers to examine MTE in a new way (Riley, 2009). Riley explored general classroom music teaching and learning via video-conferencing, using iChat and Skype, between preservice music teachers in the United States and an elementary school for underprivileged children in Puebla, Mexico. Over a two-year period, the researcher gathered data via researcher narrative, teacher reflections, and student reflections. Nine

preservice music teachers of various experience levels enrolled in an elective course entitled Spanish Immersion/Video-Conference Music Teaching Practicum participated in the study. Riley identified benefits and detriments to instruction via electronic medium. Participants experienced detriments such as technical difficulties, time delays, an inability to sing at the same time as students, and a lack of physical proximity. Beneficial outcomes included student enthusiasm, interest in cultural context, and increased access to music education for students who may not ordinarily have such access.

Johnson (1998, 2000) produced two investigations examining the use of computers on the instruction of effective rubato. In the initial study, Johnson isolated the effect of computers on the training of specific rhythmic variations by performers. Through selective sampling, Johnson identified 30 volunteer participants based on their role in top music ensembles. Participants listened to a technically accurate computer-generated music example while reading a three-line condensed score. Participants rehearsed, performed, and recorded what they considered a "perfect" performance. After the recording, participants received instruction in rhythm that emphasized the use of rubato and included a model performance by a professional musician. Following the treatment, participants practiced the original music example again while encouraged to focus on using rubato. Johnson reported that there was a significant increase for variability between the pretest and posttest performances. The change in performances suggested musicians could modify performances to become more expressive in nature.

In the follow-up study, Johnson (2000) mirrored his previous investigation with a few exceptions. The 2000 study used 40 upper-division and graduate-level music majors as participants and examined the rhythmic nuances on a performance of a second

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composition. Johnson identified results specific to this study and how they related to the previous study. The groups that had no intervention had little or no correlation to the model performance while performances with an intervention had a moderate correlation with the model performance. Those who experienced an intervention made progress in an attempt to imitate the professional music performance used as a model.

Browning and Porter (2007) completed research on the use of technology as a means to evaluate undergraduates' eye contact during teaching. The researchers examined four types of participants' eye contact behavior while teaching: Group, Section/Individual, Music, and Other. Following a video recording of a teaching experience, undergraduates participated in training on the software eMirror (Browning, 2005), a program that facilitates targeted self-observation and data collection. Ten music education students completing their student teaching experience served as participants. As the preservice teachers finished their first video training, they completed targeted self-observations of their eye contact and an accompanying reflection. The researchers prepared additional video segments for evaluation by the undergraduates. Browning and Porter found a significant increase in eye contact, specifically in the area of total student eye contact (all four categories combined).

Berg and Lind (2003) investigated the use of electronic portfolios in an undergraduate music education course. Ten undergraduates concurrently enrolled in a methods course and a practicum course served as participants for the study. As part of the requirements of each course, students maintained an electronic portfolio, which served as the data source for the study. The researchers found that by creating and refining goals,

undergraduates were able to examine questions, pose possible solutions, and redefine their conception of the problem or a solution.

Draves (2009) examined the reliability of portfolio assessment in student teaching. Thirteen undergraduate music education majors completing their student teaching semester. The portfolio served as the culminating project for the student teachers and required lesson plans, lesson analyses, video segments of their teaching, student work, a reflection on assessment, and a reflection on teaching. Participants completed a self-assessment of their portfolio using the Student Teaching Portfolio Assessment Rubric (STPAR) (Robinson, 2004). Two expert judges evaluated the preservice teachers' portfolios using the STPAR. Draves examined interjudge reliability through correlational techniques and found a high interjudge reliability ($r = .94$). Draves also examined correlations between the participants' self-assessment and each judge's ratings and reported that participants consistently rated themselves lower on the STPAR than did the experts.

Diversity/multiculturalism/special learner instruction. In the following paragraphs, I will synthesize research on undergraduates' experiences or perceptions of the nature of diversity, working with diverse cultures or special learners, and how those perceptions may evolve. Addo (2009) conducted a case study in an international general music course in order to identify how teacher educators prepared future teachers to recognize diverse arts, cultures, and communities. Twenty-three music education students enrolled in an elementary general music course completed four analytical reflective papers as assignments every two weeks. The researcher did not grade the papers, but used them as reflective action pieces to determine how the participants viewed themselves as

leaders in the internalization process. Addo defined the internalization process as incorporating knowledge discovery, learner realization, and civic responsibility Addo reported access (what preservice teachers receive), equity (fair and just expectations), and quality (the degree of excellence or standards) were key to working with assorted cultures and identified the need to recognize learners' experiences and cultures.

Wang and Humphreys (2009) examined multicultural content in a music teacher education program. The researchers estimated the hours and percentage of time preservice music teachers spent on 13 styles of music in courses of music history, theory, and performance. All participants ($N = 80$) attended a music school in the southwestern United States. The researchers obtained data by conducting primary and secondary analyses of music courses in which the preservice teachers were enrolled. They reported 92.83% of the formal music study and performance time was in traditional western music topics such as music theory, history, and performance courses.

To identify the extent to which music education students were intolerant of diversity and the malleability of these attitudes, Standley (2000) conducted an investigation of 104 students enrolled in either a six-week legislatively-mandated diversity course. Students in one of two sections of this course received the treatment, a six-week introductory music education course, while the other section served as a comparison group. Using a pretest-posttest design, Standley administered an initial anonymous questionnaire to collect demographic information. The participants completed a researcher-designed instrument, the *Diversity Comfort Scale* (DCS). The DCS contained statements pertaining to social diversity and multicultural issues. Using a five point Likert-type scale, respondents rated their personal comfort levels with each

questionnaire item. The treatment focused on immersion in either a choir consisting of secondary school students with mentally handicapping conditions or via an assignment of spending time outside of class with individuals of differing backgrounds than those of the students. Standley reported the participants in both diversity groups that received the treatment reported an increased comfort level with individuals from diverse populations. Members of the treatment group demonstrated an increased overall mean of .31 while members of the comparison group showed an increase overall mean of .32. Undergraduate students in the introductory course, however, only showed an overall mean increase of .11.

Relatively few researchers have explored how preservice teachers interact with special needs students. In his dissertation, Hourigan (2007, later published in 2009) investigated the perceptions of participants concerning teaching music to students with special needs. Four preservice music teachers, a music teacher educator, and an in-service music teacher participated. Using a phenomenological, particularistic case study design, Hourigan examined the subjects' relationships during field experiences in five self-contained elementary special education classes. The author, as participant researcher, instructed the undergraduate participants on special education strategies and discussion of other teaching cases. The preservice teachers responded in a weekly journal to prompts provided by the author and the in-service teacher. Semistructued interviews, classroom observations, and a final written reflection paper provided further avenues for data collection. The researcher maintained a journal based on his interactions and experiences with all participants. Hourigan reported the following findings regarding the team teaching of lessons. The lessons resulted in preservice teachers having: (a) an increased

comfort in teaching children with special needs, (b) an ability to articulate how children with disabilities learn, and (c) an increased confidence in teaching children with special needs in the future. The preservice teachers demonstrated new learnings, understandings, and teaching skills when they planned and implemented completely new lessons.

VanWeelden and Whipple (2005) examined the effects of long-term field experience, including planning and teaching on music education majors' ($N = 28$) perceptions of music for secondary students with special needs. The study occurred during a 15-week class comprised of ten weeks of classroom instruction and five weeks of field-based music lab experiences. In-class instruction consisted of microteaching that included planning for and teaching peers, music listening implementing three techniques supplied via articles by three authors (Bibbins, 1998; Burns, 1995; & Kerchner, 1996), preservice teacher-created musical games, case studies based on special needs, and assessment and evaluating videos of their teaching. The field-based experiences consisted of preservice teachers working with middle school students with special needs. VanWeelden and Whipple divided the participants into two classes. The first class worked with students with emotional and/or behavioral disorders (EDBD). The second class included students with acute cognitive delays (ACD). The researchers collected data through a researcher-created 17-item questionnaire that evaluated preservice teacher perceptions of how prepared, comfortable, willing, and perceptive the participants were toward working with special learners. Participants responded using a five-point Likert-type scale. The data showed increases in (a) the preservice teachers' comfort levels in interacting with persons with disabilities, (b) the educational preparation to work with

students with special needs, and (c) positive effects in regards to working with students with special needs.

In a follow-up study, VanWeelden and Whipple (2007) used data from their 2005 investigation to examine detailed responses relating to two student subpopulations, students with EDBD and ACD. The field experiences permitted the preservice music teachers to work with special needs students in self-contained, special education classrooms. They found that preservice teachers' perceptions of the behavior and learning capabilities of the students with special needs, compared to other children of the same age, did not change significantly after either type of field experience. However, the attitudes and perceptions when interacting with individuals with special needs became more positive after the field experience.

Emmanuel (2005) investigated how preservice teachers discussed the impact of a diversity course on their learning to teach music in the context of cultural diversity during field experiences. The primary purpose of the investigation was to determine whether an immersion experience increased the participants ($N = 5$) intercultural competence. Emmanuel used the theoretical framework of intercultural competence and a case study methodology for the study. Additional data were gathered through: (a) inventories to determine the cultural backgrounds and experiences of the participants, (b) detailed autobiographies, (c) researcher conducted interviews with family members, (d) reading response submissions by participants, and (e) participant responses to a prescribed set of questions concerning the preservice teachers' beliefs about teaching and learning. Emmanuel concluded that the course increased subjects' awareness of sensitivity to language containing racial slurs, established new views about diversity

including more than just race and ethnicity, and aided in establishing new personal goals relating to diversity in regards to their teaching. Two participants reported additional awareness of racial bias, struggles of the oppressed, and a call to social action. Participants further expressed the need to allow time for the processing of their personal experiences.

Lesson planning. In the subsequent paragraphs, I will discuss studies in which researchers examined preservice teachers' views on lesson planning, strategies to teach or improve lesson planning, and how undergraduates approach lesson planning. In a yearlong qualitative study, Schmidt (2005) followed ten music education majors as they wrote lesson plans and taught during a university-sponsored string lesson program. The main purpose of the study was to identify those experiences that shaped the lesson planning practices that preservice teachers carry into their future classrooms. Schmidt gathered data from participants via observation notes, interview transcripts, and the written lesson plans for their teaching sessions and subsequently found that some of the participants viewed lesson planning as unnecessary. Moreover, differences arose among participants concerning their apparent desires or abilities to think in advance about teaching. This included identifying what needed to be taught to students, the ability to make decisions in the moment, displaying a limited transfer of what was covered in class to their teaching, and the emergence of a difference between thinking about teaching and writing plans before teaching. Schmidt concluded that the 45 hours of instruction the participants received in a strings techniques course had limited impact on participants' teaching.

Schleuter (1991) examined how student teachers thought about curriculum planning by analyzing their lesson plans using qualitative and quantitative methods. The researcher explored three research questions. First, Schleuter examined what aspects of curricular decision (e.g., aims/goals/objectives/scope/sequence, content, activities, and nature of learner) were found in the lesson plans. Secondly, the research sought to examine the distribution of the curricular decisions. Finally, Schleuter investigated whether or not shifts in emphasis of curricular decisions during student teaching as demonstrated in lesson planning existed. Three preservice teachers participated in a 10-week student teaching assignment in elementary general music classes. Data collection occurred via daily planning journals maintained by the participants and through examination of lesson plans. Conferences with the student teacher, cooperating teacher, and supervisor were audio recorded, transcribed and analyzed for additional data. In addition, stimulated recall and structured interviews occurred before, at the midpoint, and following participants' student teaching. Schleuter and a co-reviewer analyzed the data for content into the three research questions discussed earlier. The researcher quantified a word count for each category as percentages to address the second and third research questions. The researcher claimed the curricular concerns of determining lesson planning focused attention on aims/goals/objectives/scope/sequence, content/concept, activities, nature of the learner, evaluation of pupils, and self-evaluation. Each participant worked within a framework of goals, constructed objectives for each lesson, planned activities, and evaluated pupil success in relation to the established objectives. Schleuter concluded that the cooperating teacher most influenced the manner in which the student teacher identified objectives or curricular goals.

Brittin (2005) was also interested in preservice teachers' lesson plans. The author examined the use of instrumental method book material through preservice and experienced teacher lesson plans. Brittin provided participants with a common method book page and instructed participants to write lesson plans for a heterogeneous group using the provided material. Thirty undergraduates and 58 practicing teachers participated. Experienced teachers analyzed the lesson plans and revealed lessons that were more concise and detailed when planning for a lesson compared to preservice teachers' lesson plans. However, the amount of detail in the experienced teachers' plans seemed more idiosyncratic to their individual style than experience level. In addition, Brittin found all participants wrote strategies in the section for warm-up/review/new material.

Huang (2002) conducted research on multicultural lesson plans of 70 preservice teachers from assorted disciplines enrolled in a multicultural education class at a university in the Midwestern United States. The course instructor presented assorted sample lesson plans that included topics of ethnicity, social class, religion, language, gender, and contemporary issues. The course required undergraduates to design a multicultural lesson plan for the grade level of his/her certification. The researcher analyzed the lesson plans based upon lesson topic and lesson purpose as identified by goals, objectives and purposes. Huang found that preservice teachers were able to locate appropriate materials, information, and visual aids for multicultural topics.

Prickett and Bridges (1998, 2001) and Sheldon (2000) examined the recognition and knowledge of basic song repertoire by preservice music teachers. Prickett and Bridges investigated music education students' basic song repertoire recognition. The

researchers' first study (1998) compared music education and music therapy majors' ($n =$ 273) knowledge of basic song repertoire with that of elementary education majors ($n =$ 306). Two music education/therapy professors compiled a list of 25 songs for the participants. Participants were to list the title of the song as it was played. The findings of the study showed the music education/therapy students had a greater knowledge of song repertoire than elementary majors. In the follow-up study (2001), Prickett and Bridges followed the same testing format but now used senior citizens ($n = 94$) and music education majors ($n = 73$) as participants. Different from the previous study, data showed the knowledge of seniors and undergraduates were quite similar.

Sheldon (2000) examined differences between experienced and inexperienced teachers' perceptions of band music content in three experimental settings. In the first study, 30 preservice teachers and 30 practicing teachers received a score with publisher, title, and composer information removed. Participants estimated the time on task required when focusing on melody, harmony, instruments, expression, texture, and form/phrases. Following the score review, the participants completed a questionnaire using a five-point Likert-type scale of basic aspects of selecting curricular literature relating to the score such as difficulty level, musical quality, was it considered core repertoire, did it reinforce musical concepts, and was the piece well-crafted. Part two of the study, conducted two weeks later, used the same participants and same composition. Participants listened to a professional recording of the work without the use of a score, evaluated the same musical elements as the first study, and estimated the amount of time spent focusing on each of those elements when considering the work for inclusion in curriculum. For the third and final part of Sheldon's study, participants used the same criteria with a score and

recordings, but responded to three different music works of assorted styles and duration. Sheldon found that when teachers review and consider a new work to be used in instruction, the level of teaching experience was not a factor. Preservice and in-service teachers appeared to be similar in their ability to gain information from a score. The only music element to appear consistently as a main focus by all participants for each part of the study was melody, suggesting that melody may be the most important musical element considered when selecting music for curricular use.

Teaching strategies/teaching effectiveness. In the current synthesis, I identified research in which investigators examined teaching strategy evaluations in undergraduate instruction, the perception of learning modalities as a tool for undergraduate instruction, student interactions, and undergraduates' evaluation or perception of the characteristics of effective teaching. Broomhead (2009), for example, investigated an individualized problem-solving approach for teaching choral phrase shaping. Using a time-series research design administered over a single term, 46 participants completed tests at four evenly spaced points of time with treatment administered between tests 2 and 3. The researcher-developed treatment consisted of four guidelines for problem solving: (a) must be oriented towards individuals in a group setting, (b) must be clear in its focus on specific aspects of musical expression, (c) must be a viable approach, and (d) must involve activities that were observable and measureable. The first and second baselines included only expressive instruction in the form of explicit verbal directions or conducting gestures. The treatment consisted of approximately 5 minutes at the beginning of a traditional instruction block and then for another 5 minutes later in the rehearsal. Participants received the treatment in three stages, an initial discussion, an out-of-context

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problem-solving activity, and an in-context problem solving activity. The activities focused on key words and phrase shaping. Broomhead reported that problem-solving approaches might be effective for teaching keyword emphasis and phrase shaping in expressive performance.

Korenman and Peynircioglu (2007) examined the effects of presentation modality and learning style preference on individuals' ability to learn unfamiliar melodies and sentences. Forty students volunteered to participate in the study. The Barsh Learning Style Inventory (Barsch, 1980) assessed participants' learning styles. The musical stimuli included sixteen unfamiliar melodies that were presented both visually and aurally. Sixteen sentences ranged in length from five to seven words. The melodies and sentences were displayed on a computer monitor. The computer software program entitled *Noteworthy Composer* created the aural stimulus. The sentences were recorded by a female voice and saved as a .wav format. Participants took tests individually and heard or viewed the items. They were instructed to recall each item. If a mistake was made, the item was shown again and this continued until the recall was completely accurate, or four attempts had been made per item. After reviewing the data, the authors reported that both learning and memory recognition were successful when individuals received the materials presented in their preferred learning modality of either visual or aural.

Duke and Benson (2004) sought to examine whether teacher attention to the progress of one of the least skilled students in the class would result in systematic differences in instructional pacing. Music education and performance majors ($N = 42$) enrolled in a class piano course participated. The piano lab was equipped with headsets allowing the instructors and students to communicate. As a treatment, the lab system was

configured to allow the instructor to hear all students practicing (control) in three sessions and only one student's piano during another three sessions (treatment). The instructor had identified the weaker student. Sessions were videotaped and ended with each student recording the repertoire piece for that session. Participants also completed a 13-item questionnaire using a four-point Likert-type scale. Duke and Benson found that teachers often simplified the performance task of the least-skilled student to increase the likelihood of success. The researchers further reported that instructional sequence modification to accommodate a student with weaker skills had no apparent effect on the students' remaining perceptions of the pace of instruction or on their levels of interest. Students expressed that they enjoyed the repertoire and found the instructor to be helpful and positive.

The ability to interact with students is an issue among music teachers and researchers have sought to provide insight for a treatment for preservice teachers (Wagner, Tuley, & Koestler,1985) . The researchers administered a basic interviewing skills training program to 16 undergraduate students using a pretest-posttest investigation. The training consisted of three, one-hour classes covering three major components of interview skills. The taught skills included environmental factors, nonverbal behaviors, and verbal behaviors in which the undergraduates discussed situations and practiced physical aspects for effective interviewing such as body language and chair placement. Before and following the treatment, participants were videotaped in a 20-minute interview in which they served as the helper with a problem student (i.e., academic concerns, dysfunctional interpersonal relationships). The assessment involved an evaluation of the frequency of the interview behaviors outlined in the treatment. Wagner

and colleagues found a decrease in the amount of advice given and participants' self-disclosure. Participants reported an increase in comfort level during the interviews. The authors indicated that those who received instruction in basic interview skills could succeed in helping students find solutions to problems they may be experiencing.

Yarbrough and Price (1989) conducted a study designed to describe extant research on effective teaching and to determine the extent to which results were being applied in music teaching. Participants for the investigation were first or second year music education majors ($n = 49$) and experienced instrumental/choral teachers ($n = 30$). The researchers videotaped first year and experienced teachers in teaching situations. Sophomore participants received training on using direct instruction techniques (i.e., teacher presentation, student response, teacher reinforcement) and taught in peer-teaching scenarios. The researchers analyzed the transcripts of the peer-teaching videos for the use of sequential patterns of instruction by identifying time spent in and the correct sequence of presentation of task, student responses, and teacher reinforcement. Yarbrough and Price found the delivery of instructional musical information in rehearsals occurred at a very low rate—less than 20% for all groups with the exception of the trained sophomores. A larger portion of time was committed to the presentation of tasks and student responses than in reinforcements for all groups. The amount of time devoted to presenting musical information with reinforcement was roughly 25%. An equal amount of time was spent giving instructions compared to musical information. The authors concluded that experienced teachers had a high rate of disapproval during instruction while the preservice teachers were highly approving.

Irwin (2006) designed the *Irwin Teacher Effectiveness Scale* (ITES) to evaluate effective teaching of student teachers using the Rehearsal Frames model for instruction in a choral setting. The author videotaped two choral rehearsals taught by two student teachers. In the first video, participants received no preparation time before rehearsal. The second stimulus video showed the application of rehearsal frames during a choral rehearsal. Subsequently, Irwin videotaped two additional rehearsals after the student teachers had been instructed on how to apply Rehearsal Frames to their rehearsal. Using the ITES, twenty-four novice and twenty-four in-service choral directors evaluated the teaching episodes and demonstrated that the two groups viewed effective teaching differently. Based on comparisons of judges' ITES overall mean scores, Irwin concluded that expert and novice teachers' perceptions of effective teaching increased following the application of Rehearsal Frames. However, the application of rehearsal frames significantly ($p < .05$) increased the overall ITES mean scores between groups.

Sang (1985) pursued quantitative support for a theoretical model of instructional effectiveness for beginning teachers in instrumental music. The model included three teaching skills categories supported in previous literature: (a) modeling skills—ability to demonstrate fundamental elements of music performance, (b) discrimination skills—ability to detect performance concerns either aurally or visually, and (c) diagnostic/prescriptive skills—the ability to analyze and correct pupils' performance discrepancies. Preservice music teachers enrolled in instrumental methods courses participated. Sang utilized students enrolled in the courses in two separate years, 1981 and 1982. Each participant was administered seven test components designed to measure modeling, discrimination, and diagnostic/prescriptive skill levels. Participants taught

fourth-grade recorder students and were videotaped for evaluation by a panel of three judges. Evaluators trained on a researcher-created observational instrument demonstrated a 90% agreement rate. The results of the instrument yielded a single numeric score for each subject. In turn, this score and the scores for the seven skill evaluations were tabulated for analysis. The author reported that the modeling, discrimination, and diagnostic/predictive skills of the preservice teachers contributed to the variance in instructional effectiveness. Sang concluded that discrimination without diagnosis and prescription is not effective teaching and suggested that modeling skills were the strongest contributors to variance in instructional effectiveness on a consistent basis.

Teachout (1997) compared the responses of preservice ($n = 35$) and experienced teachers ($n = 35$) concerning the skills and behaviors they believed important for successful music teaching in the first three years of teaching. Participants completed a questionnaire designed to elicit information regarding 40 disparate skills and behaviors that may account for effective music teaching. Teachout asked participants to rate the level of importance of each item using a 4-point Likert-type scale. Teachout found seven items common to both groups' top ten listings. These common items were:

- Be mature and have self-control

- Be able to motivate students

- Possess strong leadership skills

- Involve students in the learning process

- Display confidence

- Be organized and

- Employ a positive approach.

Experienced teachers ranked enthusiasm, time on task, student behavior, and patience higher than preservice teachers but they rated creativity and displaying a high level of musicianship as lesser skills than preservice teachers suggesting possible generational or experiential differences between preservice and inservice music educators.

Field experience/student teaching. Hourigan and Scheib (2009) examined the individual perceptions and experiences of six instrumental music education majors and their shared experiences via a collective case-study. Data collection included a single interview with each subject, five observations of each subject, and artifacts such as weekly journals. The researchers found that teaching experience may have influenced participants' perceptions of what important skills, abilities, and understandings are needed before teaching. Some participants reported an increased interest in developing skill sets for successful student teaching via technique courses while other participants believed that theoretical topics and methodologies taught during methods courses could be beneficial. One subject reported experiences not directly related to the MTE curriculum, such as a general psychology course, as being beneficial in his teaching. Furthermore, participants claimed that extracurricular experiences were critical to the development of teacher confidence.

McDowell (2007) conducted a longitudinal investigation of ten music education teachers' experiences as they progressed through field experiences prior to student teaching (3 semesters, 6 courses for a total of 15 credit hours). Participants responded to prompts for written reflections of their experiences at the end of each course. The prompts for reflections centered around five areas: (a) How did you view your field experience? (b) Do you feel your field experience has prepared you to teach in the next

education block (next segment in teaching practicum)? (c) What specific types of teaching activities did you do in your field experience? (d) What were five things that prepared you to go out and teach in your classes? and (e) What concerns do you have about your next field-experience component? The field experiences included observations of the cooperating teaching and one 15-minute instrument lesson. Each participant wrote what he or she believed would be beneficial in later field experiences to aid in preparation for student teaching. Overall, participants reported satisfaction with their teaching experiences. The participants also identified areas in which they would like additional instruction, which included classroom management, working with students with special needs, and piano keyboard skills.

Schmidt (2010), Fredrickson and Pembrook (1999, 2002), as well as Stegman (2001) explored undergraduates' perceptions of field experiences. Schmidt utilized Dewey's theory of experience as the framework for a study involving a cohort of six preservice teachers and collected data from videos, written self-assessments, and instructor assessments of in-class peer teaching. Participants believed peer teaching experiences were beneficial for learning lesson sequencing. The participants identified teaching experiences as critical in aiding their preparation for student teaching. Participants felt other teachers and their peers would be future resources and act as a support system.

Fredrickson and Pembrook (1999) examined participants' perceptions of their student teaching experiences. In 2002, the same authors examined undergraduates' perceptions of in field experiences. For each of these studies, the researchers asked participants to keep journals as a data source. Fredrickson and Pembrook (1999) found

that the thirty participants reported that talking with teachers, selecting music, and planning time were the best part of the day while the worst aspects related to poor student music making activities. These findings were echoed in the 2002 study, in which students involved in field experiences identified job responsibilities as pleasurable. In field experiences, students expressed frustration with the realization of their changing lives dealing with the difficulties of scheduling, transportation, and grading assignments.

Stegman (2001) used questioning as a means to investigate the perceptions of success and problems during instruction delivery by six choral student teachers. Additionally, the author conducted interviews and collected artifacts and found that student teachers' beliefs about learning and teaching strongly influenced their instruction of and interaction with students. Student teachers who viewed themselves as facilitators of learning regularly encouraged diverse responses to music from their students and engaged their students in questioning, cooperative learning tasks, and small-group activities. The experience also verified preexisting dispositions toward curriculum and planning. Student teacher reflection resulted in an improved understanding of their practice and a better understanding of how they see themselves as teachers. Finally, Stegman suggested that a powerful link between student teachers' images and their practice existed.

Abrahams (2009) sought to explore possible connections between college methods courses and off-campus practicum experiences as reported by nine undergraduate music education majors assigned to three different cooperating teachers. The goal of the study was to examine the success of the secondary music methods off-campus experience and to use the data to modify undergraduate course instruction. In

addition, he sought to examine how the research process changed the attitudes, perceptions, and beliefs of the participants. Abrahams labeled this methodological approach as *critical grounded theory*, "where *critical* is defined as initiating a change of perception on the part of the participants" (p. 83). Abrahams did not collected data via traditional interviews, rather through weekly seminar discussions with participants. Additional data collection included observations as well as formal and informal discussion with the three cooperating teachers. Analysis of the data revealed three emerging themes in the relationship between preservice teachers and cooperating teachers. First, cooperating teachers felt an autonomy that gave them authority to make decisions independent of external factors. For instance, despite prior agreement by the researcher and cooperating teachers regarding a set lesson plan format, the cooperating teachers did make significant changes to their plans, curricula, and assessment strategies. The second emerging theme centered on the preservice teachers' perceptions of the cooperating teacher as a role model. The student teachers were not always pleased with the cooperating teachers' behaviors but the student teachers perceived a responsibility to imitate these actions. This theme demonstrated the mixed reactions of the participants to actual teaching observations of the cooperating teachers and a few disagreed with how the cooperating teacher taught the content. The final theme that emerged was that college coursework helped to prepare preservice teachers for practicum experiences though many student interns still felt anxious and uncomfortable in front of high school students. The participants felt that the lesson planning did not prepare them for actual delivery of instruction to high school students. Participants reported feeling musically inadequate, awkward while relating to the high school students, and lacking conducting experience.

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Bowles and Runnels (1998) investigated the interpersonal relationships between university supervisors, cooperating teachers, and student teachers ($N = 61$) . Participants completed a researcher-designed questionnaire. Items on the questionnaire were grouped into categories of instructional responsibility, teacher preparation, behavior management, relationships, evaluation, and supervision. The authors found that 92% of respondents believed that first-time cooperating teachers should participate in training with other cooperating teachers. Student teachers (46%) were not sure of the amount of time the teacher should be present while they taught. Sixty-nine percent of participants reported that the student teacher should sometimes determine objectives and content of the lesson without assistance from the cooperating teacher. The act of submitting lesson plans to the cooperating teacher brought mixed results. Of the university supervisors, 92% agreed they should; however, 60% of cooperating teachers and 69% or student teachers felt they should not. The majority of respondents (67%) reported a GPA of 3.0 on a 4.0 scale should be the minimum for a beginning music student teacher. Bowles and Runnels noted that 100% of university supervisors and cooperating teachers along with 92% of the student teachers agreed that the cooperating teacher should end the student teaching experience if they believed the student teacher was not qualified. When it came to behavior management, 63% of cooperating teachers responded that the student teacher should construct their own disciplinary plan. A majority of respondents reported the cooperating teacher should intervene if they noticed deficiencies in the student teachers' relationships to students. Evaluation of the student teacher should be done by the cooperating teacher using their own criteria for evaluation and provide a final recommendation to the supervisor and that evaluation should count for 50% of the final

grade. According to Bowles and Runnels , 48% of participants believed the university

supervisor should conduct classroom observations every other week, while 40%

responded three observations during the experience would suffice.

Draves (2008), Posegate (2009), and Stegman (2007) focused on relationships

between student teachers and their cooperating teachers. Draves (2008) employed

ethnographic methodological techniques to collect data from four pairs of student and

cooperating teachers. These techniques included in-depth observation of the participants,

formal individual interviews along with focus group interviews, collection of artifacts,

and informal discussions. Draves identified five themes from her analysis. The initial

theme was that cooperating teachers desired a personal connection with their student

teachers and a relationship that was trusting, respectful, and resulted in learning for both

parties. Next, cooperating teachers valued specific characteristics, particularly personal

and professional characteristics, in their student teachers and looked for those as a basis

for forming a relationship. The third theme involved a power-sharing ceiling, where

throughout the student teaching experience, power sharing in the classroom moved back

and forth along a continuum from least power sharing to most power sharing between the

student teacher and cooperating teacher. Power sharing entailed the constant shifting of

class instruction and control based upon who was leading the instruction. Draves

concluded that the most influential theme was experience for approaching the role of

cooperating teacher is one's own student teaching experience. Finally, Draves discussed

believed that student teaching informs and nourishes the teacher identities of both student

teachers and cooperating teachers. As the study progressed, participants indicated that the

student teachers' attention shifted from themselves to that of the students. The cooperating teachers also reported a shift of focus from role model to mentor.

Posegate (2009) echoed the findings of Draves (2008) and found an identity shift in student teachers and cooperating teachers. Posegate used both quantitative and qualitative data collection techniques to examine the changes in interns and cooperating teachers during their student teaching experience. Five student teachers and their cooperating teachers participated. Each student teacher and cooperating teacher was videotaped at the beginning of the semester and again near the end of the semester. Using the *Survey of Teaching Effectiveness* (STE) (Hamann & Baker, 1995), two music student teaching experts reviewed the videos and completed the STE for each teaching episode. Posegate gathered qualitative data using individual interviews. No significant differences from pretest to posttest STE scores for either the cooperating teacher or the student teacher emerged. Based on the qualitative analysis, Posegate identified five themes that foster transition into the professional world: fulfilled expectations of parties, effective preparation of the student teacher for the experience, capable application of content knowledge by student teachers, increased professionalization, and successful induction of the student teachers as professional teachers.

Stegman (2007) investigated the relationship between student teachers ($n = 6$) and their cooperating teachers ($n = 6$) through reflective dialogue analysis. Stegman aimed to have student teachers reflect on their practice of teaching with their cooperating teachers. Participants engaged in a semistructured dialogue in which they engaged in eight reflection sessions and three interview sessions. During these recorded sessions led by the cooperating teacher, the undergraduates reflected on problems encountered during self-

selected teaching episodes. Cooperating teachers used researcher-provided guiding questions in the session that encouraged the dialogue to unfold as it may. Stegman found that most of the topics discussed were technical or clinical (i.e., techniques, strategies in practice, and issues specific to context and students). A relationship emerged between K-12 student success and the sense of success by the student teachers. In other words, student success in the performance transferred to the student teacher success as well. Student teacher skills, teacher effectiveness, student behavior, and classroom management created the majority of problems identified by the student teachers during the dialogues.

Bergee (2002) and Brand (1982) investigated preservice teachers' perceptions on classroom management during field experiences. Bergee randomly assigned 60 undergraduate music education majors enrolled in a semester-long course to one of three treatment groups (directed experience, mediated experience, or a control group) to examine their effects on preservice teachers' classroom management self-efficacy. To measure the undergraduates' self-efficacy, the researcher developed the 24-item *Preservice Music Teachers' Classroom Management Self-Efficacy Scale* (P-CMSES). The direct experience group received instruction on effective classroom management techniques and had the opportunity to rehearse the strategies with their peers while receiving feedback from the researcher. Participants assigned to the direct experience also rehearsed their selections with peers and implemented classroom management techniques. Based on these techniques, student teachers focused on the ability to sustain multiple activities, good lesson continuity, good lesson variety, and pacing. Participants in this group then visited a school site and rehearsed their selections with high school

students. Following the rehearsal, participants completed the P-CMSES and two weeks later completed it again. The mediated experience group received instruction on effective classroom management techniques. Unlike the directed group, this group viewed videotapes of experienced teachers while the researcher isolated sequences of classroom management for discussion. After viewing the tapes and following a brief discussion, the mediated group completed the P-CMSES. Two weeks later, they took the P-CMSES as a follow up. The control group received no instruction. For the control group, the posttest and follow up administrations of the P-CMSES occurred within the same timeframe as the other treatment groups. Bergee reported that participants in the direct experience group displayed substantial gains in self-efficacy. Participants in the mediated group demonstrated gains that were nearly identical to the directed experience group. Bergee reported that although there were similar point gains, participants who received the mediated experience did not appear to display similar increased awareness of self-efficacy, as did participants in the directed experience group.

Brand (1982) investigated the effects of student teaching experiences and cooperating teachers ($n = 42$) on the classroom management beliefs and skills of preservice music teachers ($n = 47$). Participants used the *Behavior Management Skills Inventory* (BMSI) to evaluate students' classroom management skills and the *Beliefs on Discipline Inventory* (BDI) to determine participants' beliefs about classroom management skills. Participants completed both pretest and posttest administrations of each instrument following the first and last weeks of their student teaching semester. Brand discovered no statistical differences in either the pretest or posttest in classroom management beliefs and skills between the student teachers and cooperating teachers.

Therefore, Brand concluded that the classroom management beliefs of both preservice music teachers and cooperating teachers were similar at the beginning and the end of student teaching.

Community and service-learning. In the current literature search, I found studies in which scholars investigated the role or perceptions of preservice music teachers participating in community of service-learning ventures. Siebenaler (2005) conducted a descriptive case study with teacher education students ($n = 5$) and elementary classroom teachers ($n = 10$) enrolled in a general music methods course. Siebenaler hoped to examine the application and effectiveness of a service-learning model. The service-learning project accounted for 20% of the participants overall grade for the course. Data for the study consisted of four reflective writing assignments collected throughout the course. As part of the course, participants observed and assisted in instruction for a minimum of 120 minutes, then completed three additional visits for a minimum of 30 minutes for each visit. Within the context of the three follow up visits, the undergraduates presented two song/listening sessions and in the last visit taught a movement to music lesson or a lesson about an instrument. Following the first site visit, participants described the physical setting and the children they would be observing and teaching. The instructor provided feedback to the students after the reflection and participants prepared for and then taught their peers the future lessons they would teach at the community site. The second reflection occurred following their first music-teaching episode at the community site. In the prompt for the second reflection, Siebenaler asked the preservice teachers to describe their feelings as they prepared for the initial presentation with the community students. Participants' expressed feelings of anxious anticipation and some

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degree of confidence due to preparation and rehearsal of the lesson during class instruction. In reflection three, assigned at midpoint of the semester following two community site teaching episodes, Siebenaler instructed the participants to compare their second teaching experience to the first. Some participants were less anxious for their second teaching experience, while others found it more difficult since it included using new material during the lesson (i.e., movement). The final reflection occurred following their third teaching episode at the community site. University students thought the younger students enjoyed music and hoped those students would continue to participate in music activities. Participants found themselves to be flexible and accommodating to the students. As the preservice teachers were at the beginning of their MTE program, they delt with inexperience, but demonstrated an ability to evaluate strengths and weaknesses during the field experience and through reflection. The participants showed an aptitude for applying the strategies, skills, and techniques presented in the course accompanying the community experiences.

Byo and Cassidy (2005) investigated the extent to which the National String Project Consortium (community string education programs where preservice teachers received hands-on training and authentic context learning opportunities) goals were accomplished across thirteen university sites from 2003 to 2004. Byo and Cassidy collected data from 1,458 participants who were project directors, master teachers, student teachers, community children, or the parents of the community children. The student teachers ($N = 94$) responded to questions concerning professional goals, their perceived value of and time spent in the String Project activities, and the degree and quality of work of the master teacher. The student teachers provided positive evaluations

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of the master teachers and recognized their high-quality feedback. When responding to long-term goals, 71% of the student teachers were currently in the process of obtaining a music education degree, and 80% responded that they would eventually teach in schools. Byo and Cassidy further noted that at four of the university sites there were measurable numbers of music education and/or double majors who indicated they would not teach music in the schools following graduation.

Researcher Ward-Steinman (2006), as well as Soto, Lum, and Shehan Campbell (2009) investigated university and public school music partnerships. Ward-Steinman's investigation provided a description of the development of the university-public school partnership, the community childrens' background music experiences and style preference, and student and preservice teacher reflections. Senior music education majors ($N = 10$) participated in the study. The researcher defined 17 musical, creative, and teaching goals. The goals were singing alone and with others, moving to music, mentoring, positive, etc. Participants completed a researcher-designed questionnaire at the conclusion of the program. The participants rated themselves on each of the 17 goals using a five-point rating scale. Ward-Steinman found that student teachers felt most successful with: (a) moving to music, (b) acting as a positive force, and (c) performing/listening to a variety of music. The least successful goals perceived by the student teachers were composing and improvising. The student teachers revealed many positive aspects to the program such as the opportunities of working with at-risk students, enthusiasm of program participants, and the opportunity for real life teaching.

Investigation of another university public school partnership utilized ethnographic methods in a study conducted by Soto, Lum, and Shehan Campbell (2009). The program,

Music Alive! in the Valley (MAV), a yearlong partnership designed to engage university music education students and faculty members with teacher and students in a rural location served as the setting for the study. The authors analyzed field notes, fully developed notes, researcher journals, one-on-one semi-structured interviews with university students, and open-ended group interviews with the children. Soto and colleagues found that the student teachers realized the importance of understanding another culture, identified that the children were anxious to learn, and that the student teachers enjoyed the experience of teaching in a real classroom.

I found a final set of research studies relating to service-learning partnerships conducted by Reynolds (2003), Reynolds and Conway (2003), and Reynolds, Jerome, Preston, & Haynes, (2005). Reynolds (2003) examined the perceptions of participants in a service-learning partnership. Nine preservice teachers participated in an elementary school site where the principal could not employ a music specialist. Reynolds utilized qualitative methods of data collection including interviews, feedback forms, notes from phone conversations and emails, as well as artifacts such as lesson plans and reflection forms. Data analysis revealed that as participants progressed through the program, their perceptions of the rigor of teaching elementary music changed—what they thought would be easy, was not so easy. Participants further revealed that the lesson planning feedback, access to model lesson plans and sources, and reflection assisted them in their in-service learning. Class lecture and discussions were beneficial because of the connection to public school classroom and their interactions with real life students.

Reynolds and Conway (2003) examined service-learning as a music teacher preparation practice within an elementary general music methods course. Ten students in

a service-learning field experience participated in the study. Data collection included an action research interview design. Reynolds interviewed the participants and coded the interviews for common themes. Reynolds created a researcher log and compared the common themes between the log and participant interviews. The interview transcripts and notes were then sent to Conway for collaborative analysis. Together, the researchers organized the data into three categories: (a) participants' general perceptions regarding service-learning, (b) issues of implementation, and (c) service-learning as motivation for students' selecting elementary general music as a first career choice. Based on their shared analysis, Reynolds and Conway found that the use of scripted plans aided the participants in understanding techniques that focused their delivery of instruction and the improved learning experience for the children. Scripted lessons boosted their teaching confidence. The participants responded that they enjoyed the authentic context learning. Furthermore, the feedback about student teachers' teaching permitted the participants to focus their self-evaluations and preparation for upcoming lessons.

In the final study in this series (Reynolds, Jerome, Preston, & Haynes, 2005), the authors examined the perceptions of ten preservice teachers who had completed an elementary general music methods course, 12 first-grade teachers serving as cooperative teachers for preservice teachers, and the principal at the service-learning site. Data collection included one-on-one interviews, lesson plans, reflection forms, researcher logs, and copies of communications between the researchers and the participants. Based on their analysis, Reynolds and colleagues believed that the participants valued the authentic context experience. Participants realized that they were the only music teachers for the children and expressed concern regarding the effectiveness of their teaching.

Evaluating others' teaching. In the current survey of research, I found the following studies that related to preservice teachers' evaluations of inservice teachers as well as their peers. More specifically, these researchers studies examined preservice teachers' thoughts while observing, students' thoughts regarding the feedback they received, teaching effectiveness, instructional delivery, and student behavior or teacher eye contact.

Berg, Woody, and Bauer (2002) explored preservice music teachers' cognitive processes during the observation of music instruction. The purpose of the study was to examine the focus of attention and the reflective thinking of undergraduate music majors ($N = 24$) while viewing a stimulus tape of teaching episodes. The researchers used six video excerpts taken from the *Looking in on Music Teaching* series (Olson, Barrett, Rasmussen, Barresi, & Jensen, 2000). Participants viewed the video excerpts independently while in the presence of an investigator. Following the viewing, participants completed a questionnaire that addressed prior teaching experiences and demographics. Participants responded to a series of questions pertaining to teaching private lessons, teaching music in church and/or an outdoor setting, leadership positions, and tutoring of young music students in school. The researchers recorded responses and transcribed and then coded them. The authors reported that the focus of attention tended to reflect video camera placement. For example, if the teacher was the focus in frame, they received the most comments. If students were the focus in frame, then they received the most comments. Participants also tended to view the subject to whom attention was directed in the videotape in a negative way. For example, as the teacher was often the focus of attention, subjects tended to comment on the teacher's behavior.

Johnson, Price, and Tafuri (2002) examined the differences between preservice teachers from the United States (US) and Italy on their evaluation of public school band directors. Music education majors from the US ($n = 43$) and Italy ($n = 27$) evaluated and provided comments on rehearsals of four US band directors. The researchers selected five-minute clips of the videos that reflected the most student/teacher interaction and combined the clips onto a master stimulus tape in random order. Participants viewed the tape and provided an overall rating of the excerpt using the following researcher-created scale: 1-20 poor, 21-40 fair, 41-60 good, 61-80 excellent, and 81-100 outstanding. Written comments provided by the participants were categorized as classroom control, instruction delivery, lesson content, student performance, and miscellaneous. After analysis of the teacher scores by means of repeated-measures ANOVA, the researchers found a statistically significant difference between nationalities and reported that participants from the US evaluated the teachers more positively than Italian participants. Italian participants remarked more on student performance (17% to 7%) and lesson content (16% to 10%), while the US participants' remarks focused on classroom management (19% to 7%) and teacher feedback (11% to 4%). Participants from both countries evaluated individual teachers differently from each other. Nonetheless, participants from both countries ranked the individual teachers in the same order.

In a later comparison of international music education students, participants ($N = 242$) from across the globe participated in a study conducted by Johnson, Price, and Schroeder (2009). The authors investigated whether preservice teachers could discriminate between novice and expert choral directors regardless of the proficiency of the choral ensemble. The researchers created a stimulus tape that included two

accomplished public school choral educators and two undergraduate music education students. Participants viewed the stimulus tape and rated each of the four teacher excerpts using the same scale as a previous study (Johnson, Price, & Tafuri, 2002) . Johnson, Price, and Schroeder found that the participants ranked both the expert and novice teachers similarly regardless of the ability of the ensemble. The distinction between novice and expert teachers appeared when identifying one of the undergraduate teachers as not being a choral student. Participants made this observation based upon the terminology used for instruction. Johnson and colleagues believed the participants were clearly able to perceive differences of the teachers in skill and experience.

Additional researchers who investigated the evaluation of others' teaching explored the effect of experience level on evaluation. Standley and Madsen (1991) developed a task that would differentiate music educators' and therapists' levels of expertise and ascertain whether such expertise is independent of years of teaching experience. One hundred fifty individuals at a variety of levels of experience from undergraduate first-year students to expert teachers (more than ten years of experience) Participated. Participants viewed a stimulus tape that contained 20 one-minute excerpts of special education interactions with mainstreamed groups in assorted music classes at different grade levels from elementary to high school. Participants wrote as much as possible about what they saw in the video. The researchers analyzed responses based on factual versus inferential content and then grouped responses according to each participant's experience or expertise. The observation task allowed a clear differentiation of music teaching expertise and level of preparation in a music education degree program

to emerge. The authors concluded that group mean scores and the score range increased as the experience/expertise level increased.

Using the Standley and Madsen (1991) study as a template, Sheldon and DeNardo (2004) examined the differences in levels of observational expertise between prospective music education majors ($n = 26$) who were high school seniors intending to enroll as music education majors and junior music education majors ($n = 26$). Participants viewed a video consisting of 20 one-minute music interaction excerpts and wrote as much as they could concerning their observations. The researchers analyzed participant responses for descriptive and inferential content with points being awarded for accurate descriptions or deducted for inaccurate descriptions. Based on a one-way ANOVA of the mean scores, the authors found no significant differences between the groups, although a significant difference in response accuracy between experience levels existed. The responses of upperclassmen from their observations of music settings were factual in nature, not inferential, and demonstrated higher-order thinking skills. Preservice upperclassmen demonstrated a greater accuracy in the observation task than did prospective freshmen [F (1, 244) = 22.88, $p < .01$].

Mason (2008) explored preservice teachers' perceptions about and preferences for Kodály and Orff methodologies. Undergraduate music education majors ($N = 134$) completed a questionnaire designed to assess preferences for instructional methods for elementary general music instruction, their past experience with the methodologies, and to identify which methodologies were discussed as part of their undergraduate training. After completing the questionnaire, the participants viewed a video of five elementary music-teaching episodes and identified the methodology they believed was used. Choices

included Orff, Kodály, Dalcroze, Suzuki, and "Don't Know." Mason found that the participants were more accurate at identifying the Kodály method when viewing the teaching excerpt containing the use of sol-fa and the Orff method when viewing the excerpt utilizing Orff instruments. Findings of the remaining three episodes yielded few correct responses from all participants. Elementary music education majors yielded the highest number of correct responses for all teaching episodes.

Misenhelter (2000) examined various scripted rehearsals in order to determine whether preservice teachers could identify teaching strategies by presenting the participants with a variety of process-oriented (conceptual) and product-oriented (nonconceptual) strategies in ensemble settings. Three groups of university students participated in the study as instrumental students ($n = 36$), vocal students ($n = 36$), or elementary education students ($n = 36$). The researcher taught twelve scripted lesson plans to a lab ensemble and recorded them for subsequent evaluation. While viewing a stimulus video demonstrating the scripted lessons, participants identified the purpose of the example as conceptual or nonconceptual and responded to three questions concerning the effectiveness of teaching, effectiveness of the conducting, and any implications for ensemble improvement seen on the video. Misenhelter found that instrumental students consistently scored higher on identifying conceptual versus nonconceptual scripts. Nonmajors, however, scored higher overall and achieved a higher correct response rate than other groups when evaluating scripts related to dynamics, texture, and intonation.

Wolfe and Jellison (1990) explored the perceived differences among teaching styles, and the identification of perceived teaching styles in two experiments. Participants for the first experiment included 188 elementary majors and the second experiment

involved 99 music education/therapy/pedagogy or performance majors. Participants evaluated the written scripts of three music-teaching episodes based on three different instructional styles: lecture, questioning, and positive feedback. Participants read the transcript, evaluated the script using an evaluation form, and then read the next transcript. The researchers employed a stepwise discriminant analysis of comparison of the responses and found that both music majors and elementary majors are similar in their perception of their own teaching style as well as their perceived differences between the three different teaching styles. All participants negatively perceived the lecture format of instruction. Participants were less likely to engage in asking questions without giving feedback than they were with providing positive feedback.

Prickett and Duke (1992) investigated musicians' and nonmusicians' music instruction evaluation. The researchers sought to determine the degree to which the assignment of differential observation tasks affects the subsequent evaluation of the individual components of a music lesson, and whether the extensive experience in music settings by music majors' influences their evaluations. Participants (music majors $n = 120$, nonmusic majors $n = 120$, all sophomores or beyond) completed at least one course regarding efficient teaching and feedback techniques. Participants viewed an 11-minute videotaped excerpt of an 11-year-old's private violin lesson. Participants were assigned to one of three observation tasks (teacher approval, teacher disapproval, combination) and were provided written instructions asking them to respond in writing as much as possible about the teacher, students, and the lesson in general. Participants commented on any specific aspects of the lesson they felt were important. One group's instructions differed slightly by adding the task of tracking the number of approvals and disapprovals given by

the teacher. The analysis supported previous findings that factors that are extraneous to the events that are actually being observed affect the observers' perceptions and evaluations of teaching. Specifically, the researchers found significant differences between music majors and nonmajors in their evaluations of music teaching. Music majors reported a greater number of teacher approvals than nonmajors. Participants who were supplied the focused task instructions recorded a higher number of approvals, suggesting evaluations of teaching might be affected by observation tasks.

The evaluation of specific tasks used in instruction was the focus of a study conducted by Madsen and Cassidy (2005). They sought to examine preservice students' (before and after practicum teaching) and experienced teachers' evaluations of effective teaching and student learning after participation in student-focused and teacher-focused observations of videotaped music classes. Participants ($N = 78$) were both undergraduate and graduate students enrolled in two comprehensive universities. The first group consisted of junior-level undergraduates ($n = 26$) enrolled in coursework just before a practicum experience, while student teachers comprised the second group ($n = 26$). The third group ($n = 26$) included graduate students who had full-time teaching experience. All participants viewed a stimulus tape of one first-grade lesson and one third-grade lesson. Half of the participants in each experiment level focused attention on the teacher within the first-grade class and then the students of the third grade class. Conversely, the other half of the participants watched with the opposite focus of attention—the students in the first grade class and then the teacher in the third grade class. Participants evaluated the overall effectiveness of the teacher and provided as much detail as possible concerning what they observed. Second, the participants viewed the students and

evaluated teaching effectiveness using similar rating methods. Madsen and Cassidy

reported differences due to teaching experience but not for focus of attention. Focus of

attention had no significant effect on the preservice and experienced teachers' numerical

ratings of teaching effectiveness and student learning. The authors noted that the

experienced teacher group wrote a considerable number of comments (535 comments)

about the teacher and fewer about the students (318 comments) compared to the more

equitable prepracticum group (453 teacher comments; 339 student comments) and fewer

than the postpracticum group (547 teacher comments, 423 student comments).

Preservice teachers evaluated feedback and classroom behavior during the

viewing of others' teaching (Darrow & Johnson, 2009). The researchers presented a study

composed of two experiments. In each experiment, they examined whether or not

relationships existed between preservice music teachers' and music therapists' nonverbal

behaviors and the perceived rapport with each other. The first study included thirty-one

music therapy majors and twenty-five music education major participants. The

participants served as evaluators in one of three evaluation conditions: visual-only ($n =$

15), audio-only ($n = 15$), and audio/visual ($n = 26$). The researchers created a stimulus

tape of 45-second excerpts depicting practicum-teaching sessions of 15 music therapists.

Participants viewed the 15 excerpts and evaluated them for perceived client rapport.

While viewing the stimulus tape, each evaluator provided a single overall ranking of 1

(no client rapport) to 10 (exceptional client rapport) for each therapist's teaching session.

The evaluators provided comments justifying to their ratings. Two trained observers

viewed the stimulus tape and recorded the frequency of the preservice therapists'

nonverbal behaviors including proximity, gestures, eye contact, and facial effect.

Following a one-way ANOVA, the researchers found differences between 10 of the 15 stimulus presentations. Rapport ratings under audio/visual condition were not significantly different from under at least one of the other two conditions. The authors further reported that differences between rapport ratings of the evaluators who were viewing only the presentations and those who were only listening to the presentations existed.

In the second experiment, Darrow and Johnson (2009) examined the evaluation of preservice music teachers' rapport in a video-recorded teaching situation. Seventy-eight music therapy and music education majors served as evaluators using the same evaluation conditions as the prior study. Ten preservice teachers volunteered to create the stimulus tape, which contained sixty-second excerpts, one from each volunteer. Evaluators assessed the teaching episodes using the same rating scale as the previous study and provided written defenses of their ratings. The researchers found significant differences for 4 of the 10 teacher presentations. Similar to the previous study, the researchers completed *post-hoc* tests and found in all but one of the four presentations, rapport ratings of the audio/video evaluators were not significantly different from the remaining two evaluation conditions. Darrow and Johnson reported that the results of both studies suggested that rapport ratings do not depend on nonverbal behaviors alone, but rather depend on student therapists' verbal and musical skills. Moreover, the most important nonverbal behaviors were eye contact and the use of gestures.

Duke and Blackman (1991) compared the evaluation ratings of observers who were assigned to one of four different observation tasks (teacher reinforces correct responses, gives corrective academic feedback, reinforces appropriate behavior, or gives

corrective social feedback) and aimed to determine the relationship between events recorded during the course of an observation period and subsequent evaluation ratings. Participants, 100 music and 100 nonmusic majors, viewed a 12-minute segment of a fifth-grade music class. Following the end of the video, participants rated the teacher's performance on the four variables. Following data analysis, Duke and Blackman suggested that differential observation tasks did not affect the observer's evaluations of teaching, regardless of whether they were music or nonmusic majors. No significant relationships emerged in the evaluation ratings among the four observational tasks. The researchers further reported that no relationship existed between the specific data recorded by observers and the same observers' subsequent evaluations of teaching performance.

Vandivere (2008) explored ways to improve instructional delivery through somewhat novel means. The author used a multiple case study methodology to examine the nonverbal communications and role perceptions of preservice band teachers, and the extent to which these individuals found meaning and value in theatre seminars. A convenience sample of three preservice band teachers participated in the study. These three band teachers participated in three theater seminars that included exercises to help them communicate more effectively, be more comfortable in front of a group, and be more aware of how they presented themselves. Data included videotaped observations of the seminars, observations from videotaped classroom teaching episodes, videotaped participant reflections on their teaching episodes, participant interviews, journaling, and online peer discussions. Following the seminars, the researcher coded data using a cross-case analysis and identified four emergent themes: past experience, adaptation,

realization, and being aware. According to Vandivere, the theatre seminars provided participants with an increased awareness of their nonverbal communication behaviors in the classroom and could be meaningful and valuable with respect to their perceptions of their roles as teachers.

In my search for MTE literature, I found additional studies (Yarbrough and Madsen, 1998; Yarbrough and Henley, 1999) in which researchers focused on evaluation of teaching during choral rehearsals. Yarbrough and Madsen (1998) designed a study to examine the impact of the presence or absence of effective teaching traits such as teacher talk, body movement, student response, eye contact, and facial approvals. Participants (N = 89), students at a large university, were classified as graduate or undergraduate and vocal or instrumental. Participants evaluated a stimulus videotape of seven rehearsal excerpts focused solely on the conductor/teacher. In groups of twenty or fewer, participants viewed the videotape and completed evaluation forms. Participants rated the conductor/teacher in each of the excerpts on a scale of 1-10 (poor to superb) in the categories of use of rehearsal time, musicianship, accuracy of instruction, student attentiveness, student performance quality, and overall teaching effectiveness. Using a repeated measures ANOVA, the researchers found no significant differences between groups or majors, and no significant interactions. A paired comparison t-test evaluated whether the evaluations for the faster excerpt were significantly different from the slower excerpt. The authors found a significant difference between rehearsal evaluations of the fast and slow excerpts. They concluded that the highest rated excerpt contained less off-task student behavior, a higher percentage of approvals, more eye contact, more activity

changes, and that the average length of both teacher and student activities was 5-6 seconds.

In a later study, Yarbrough and Henley (1999) examined whether focusing the attention of evaluators on students instead of the teacher would affect the assessment of teaching in choral rehearsal situations. The authors utilized both graduate and undergraduate students ($N = 176$). The randomly assigned participants joined one of two experimental groups. One group observed and evaluated seven videotaped choral rehearsal excerpts with the camera focused on the conductor/teacher, while the second group observed and evaluated the same excerpts except with the camera focused on the students singing in the ensemble. Participants evaluated the same categories as the prior study utilizing a scale of 1-10 (poor to superb). After providing a numerical rating, the participants wrote comments about each excerpt. The authors reported that evaluations were different when the focus of observation changed. For both groups, the ratings were lower when the focus of observation switched to the students in the ensemble. The authors found that the evaluators in the teacher focus group expressed frustration at evaluating students without the ability to see them. However, the evaluators in the student focus group did not take issue with the inability to see the teacher.

Additional research in which investigators examined the teaching of others have explored patterns of instruction (Henninger, 2002; Price, 1992; and Yarbrough, Price, & Hendel, 1994). Price conducted three experiments that investigated sequential patterns of music instruction and the ability of preservice music teachers to learn to use them. In the three experiments, Price examined the effects of assorted combinations of instruction, observation training, and practica, followed by competency-based videotape self-

observation on participants' use of sequential instruction in a rehearsal. Each experiment included preliminary instruction and observation training in reinforcement principles, and videotaped analysis while teaching/rehearsing peers followed by participant self-observation with a peer reliability observer. Price reported in all three experiments that undergraduates significantly increased their use of complete sequential patterns, as defined for each experiment. Furthermore, the amount of time spent on teacher feedback increased significantly in all three experiments. Finally, there were significant changes in time spent in sequential patterns and some components for all three experiments.

Henninger (2002) examined the effects of knowledge of instructional goals on the observation of teaching and learning. The purpose of the study was to determine whether the perceptions of observers informed of the proximal instructional goals differed from those not informed. Students enrolled in teacher preparation programs from six schools participated ($N = 120$). Half of the participants were informed of instruction goals or targets prior to completing the observation task. The remaining participants received no instructional targets guidelines. All participants completed a questionnaire and wrote clear statements of what they saw and heard during their viewing of the stimulus tape. Participants considered the classroom setting, teacher behavior, teacher/student interactions, lesson organization, student performance, and other student behavior. Participants not informed of the instructional goals provided more teacher-focused, positive, and inferential statements than did preservice teachers who were aware of the goals. The researcher found that all participants, regardless of their experimental condition, wrote significantly more statements that addressed teacher behavior (80%),

than statements that addressed student behaviors (14%). This indicated that the observers directed their attention toward the teacher more than toward the students.

Yarbrough, Price, and Hendel (1994) examined the effect of sequential patterns and different modes of presentation on evaluations of music teaching by experienced music and nonmusic teachers as well as university music and nonmusic students. The purpose of this study was to replicate a prior study by the authors (Yarbrough, & Hendel, 1993) where the participants were elementary and high school students. Yarbrough, Price, and Hendel assigned participants ($N = 614$) to one of four treatment groups: (a) observing and evaluating video with audio, (b) audio only, (c) video only and (d) written script only. The stimulus video included 20 examples of sequential patterns of instruction by an experienced choral teacher trained in using sequential patterns for teacher task presentation, student response, and specific teacher reinforcement. Participants evaluated the 20 teaching examples on a scale of A+ (93-100) to F (0-4). Following an analysis of variance comparing the treatments and levels of experience, the researchers found significant differences in means between musicians and nonmusicians, suggesting that performance quality played an important role in determining rehearsal evaluations by musicians. Musicians rated the video only treatment highest and the audio the lowest. Nonmusicians, however, rated the audio-video presentation the highest and the script treatment the lowest. Yarbrough and colleagues further reported that the nonmusicians' evaluations were significantly higher than those of musicians.

Further research in patterns of instruction, conducted in two parts by Goolsby (1997), investigated verbal instructions used during instrumental rehearsals by expert, novice, and student teachers. Participants ($N = 30$) examined changes in instruction

evidenced by preservice ($n = 11$) teachers exposed to guided-observation as part of an instrumental methods course. The eleven undergraduates received instruction relating to rehearsal techniques via a three-quarter-long sequence of instrumental methods, which included conducting a peer ensemble as well as both a middle and high school band. During their senior year, the participants met frequently and placed greater emphasis on rehearsal techniques. Goolsby reported that the three groups of teachers addressed rhythm/tempo more frequently than other performance variables. However, expert teachers made more comments specific to expressive performance and had a higher rate of specific positive feedback than novice or student teachers. Additionally, Goolsby found a significant growth in the application of sequential patterns of instruction, however not to the extent of the previous study by Price (1992).

Price, Ogawa, and Arizumi (1997) examined whether selected types of student/teacher interactions widely used throughout the United States could be applied to a music instruction setting in Japan. Japanese ($n = 10$) and American ($n = 10$) undergraduate music education students viewed videotaped music lessons of two different teachers and evaluated the teaching episodes of isolated sequential patterns of instruction by assigning an overall single score using a scale of A+ (93-100) to F (0-4). Significant differences ($p <. 001$) existed between both nationalities and teachers. Japanese students rated the teaching lower than the Americans, but all participants consistently provided higher ratings to the same teacher. All evaluators could evaluate student on-task behavior, teacher enthusiasm, and the pacing of the lesson.

Further investigations of others' teaching specifically examined teaching effectiveness (Butler, 2001; Hamann, Baker, McAllister, & Bauer, 2000; Johnson,

Darrow, & Eason, 2008; Madsen, 2003). Hamann et al. examined what effect, if any, music teacher classroom-delivery skills and lesson content had on university music students' perceptions of the lesson and teacher appeal. Participants ($N = 511$) viewed four videotaped teaching episodes that were comprised of combinations of good or poor delivery skills and good or poor content. Participants were lower-division undergraduates (freshmen and sophomores), upper-division undergraduates (juniors and seniors), and graduate students (masters and doctoral). Following the viewing of each episode, participants completed a questionnaire asking demographic information and responded to two questions: (a) how interesting was this lesson and (b) how much did you like the way the teacher taught this lesson? Participants responded using a Likert-type scale of 1-5 for each question. The researchers employed a two-way MANOVA with repeated measures and discovered that graduate students had a tendency to rate interest and liking for each of the four teaching episodes as high or higher than did either upper- or lower-division university students, while upper-division students tended to have higher ratings than did lower-division students on the items. Hamann and colleagues further reported that students preferred teaching episodes with good teacher-delivery skills and found them to be more interesting than those lessons with poor teacher delivery, regardless of lesson content quality. Furthermore, effective teacher-delivery skills enhanced student liking and interest in lessons, regardless of their content.

The perceived effectiveness of novice and experienced teachers served as the subject of an investigation by Johnson, Darrow, and Eason (2008). The intent of the study was to investigate whether a relationship existed between skilled and novice music teachers' ($N = 108$) nonverbal behaviors and their perceived effectiveness and rapport

with each other. The researchers divided the participants into one of four treatment

groups: audio and visual, audio-only, visual-only, and transcript only. Two public school

choral directors and two undergraduate choral majors with no conducting experience

served as stimulus teachers for the investigation. A 29-minute master stimulus tape was

produced for participants to review and evaluate. Participants conducted evaluations

under the treatment conditions and utilized an overall rating (1-none to 100-exceptional

rapport) for perceived rapport. The participants utilized the same scale to evaluate overall

teacher effectiveness. The researchers used a mixed-methods approach. They used a

MANOVA to examine the effects of experimental treatment group and gender of

evaluator for rapport and effectiveness ratings, which yielded no significant main effects

for group or gender. The researchers did find, however, significant effects emerged for

teacher and perceived teacher effectiveness. The analysis also identified a significant

two-way interaction between the group and teacher observed for variables of rapport and

effectiveness. Statements related to eye contact and effectiveness of gestures/conducting

styles appeared most frequently connecting rapport to effectiveness. Participants rated

expert teachers significantly higher than the novice teachers with one stimulus teacher

being rated consistently the poorest. The correlation between rapport and effectiveness

was found to be strong ($r = .85$). The researchers used qualitative techniques to evaluate

the participants' comments for trends and patterns. Similar to the quantitative findings,

the expert choral teachers received more comments with regard to nonverbal behaviors

than the novice teachers. Johnson and colleagues further noted that professional dress and

the comments on dress relating to an image of professionalism seemed to emerge from

the data.

Butler (2001) studied teacher effectiveness with 15 undergraduate music education majors who constructed concept maps on the topic of "teacher effectiveness" prior to and following two microteaching episodes. Butler utilized a mixed method techniques in the study. The study included three stages: (1) instruction in the technique of concept mapping and construction of an initial concept map on teacher effectiveness; (2) microteaching instruction; and (3) participants' completion of a second concept map and personal interview with the researcher. The *Survey of Teaching Effectiveness* (STE) (Hamann & Baker, 1985) provided data on the participants' ability to demonstrate effective teaching behaviors. The researcher coded and sorted data from the concept maps, self-evaluations, and interviews by frequency response and by an *a priori* researcher-designed coding system. Butler reported that preservice teachers' understanding of effective teaching was in the formative stage and that microteaching had a direct impact on students' teaching and skill development.

Madsen (2003) examined the effect of accuracy of instruction, teacher delivery, and student attentiveness on musicians' evaluation of teacher effectiveness. Participants ($N = 168$) were music students in middle school or high school, undergraduate music majors, or experienced classroom music teachers. Each experimental group, consisting of 42 participants, viewed and evaluated a stimulus videotape of eight teaching segments developed to isolate combinations of accurate and inaccurate instruction, high and low teacher delivery, and on- and off-task student behavior. Participants rated and defended the teacher in terms of effectiveness using a 10-point rating scale and written comments. . Madsen coded data into one of four categories: (a) accuracy of instruction, (b) delivery, (c) classroom management, and (d) other. The researcher reported that adolescents and

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adults often expressed global agreement of a teacher's effectiveness. According to

Madsen, high/low teacher intensity might have had a greater influence on secondary

music students' perception of effective teaching than the accuracy of the teacher's

instruction and the social behaviors of the students.

In reviewing studies for the current review, I identified studies on teaching

evaluation that examined the use of time by instructors (Goolsby, 1996), the effects of

recorded models (Montemayor & Moss, 2009), and the effect of teacher experience

(Henninger, Flowers, & Councill, 2006). Goolsby (1996) compared in real time the use

of rehearsal time during classroom periods by experienced, novice, and student music

teachers. The researcher videotaped each of the participants ($N = 30$, ten per group) three

times over a four-month period for a total of 90 rehearsals. Goolsby identified variables

i.e., preparation time, initial teacher talk, ensemble warm up, time devoted to breaks,

rehearsal time per piece, etc.) by examining the rehearsal videos and used an ANOVA to

determine whether the three teacher groups differed on the use of time during the class

period. Following additional ANOVA's and MANOVA's, the researcher reported that

student teachers and experienced teachers both spent similar amounts of time in teaching

activities. Goolsby found the amount of time used in warm-up and rehearsal of each piece

contributed to the pacing of the lessons. Furthermore, experienced teachers were on task

sooner than novice or student teachers at the beginning of class and the period began with

a minimal amount of teacher talk.

Henninger, Flowers, and Councill (2006) examined the effect of the level of

teaching experience on student progress and performance quality in an introductory

applied lesson. Nine experienced teachers and fifteen preservice teachers participated in

the study. The task for the participants included teaching an adult beginning instrumentalist to perform *Mary Had a Little Lamb* on a wind instrument with accurate notes, rhythms, and appropriate performance techniques. A panel of 26 instrumental music teachers evaluated the final videotaped performances of the adult beginners. Evaluators viewed the stimulus tape twice and each time rated performances on a Likert-type scale of 1 to 5 (poor to excellent). The researchers randomly selected six participants to view and respond to questions about their instructional process and the adult student outcomes.. Following a two-way ANOVA, Henninger and colleagues found preservice teachers spent more time modeling on their instruments than the experienced teachers, but experienced teachers spoke more than the preservice teachers. The researchers reported experienced teachers provided more feedback in the form of approval or disapproval statements and allowed their pupils to talk more than the novice teachers.

In the Montemayor and Moss (2009) investigation, the authors investigated the effects of aural model-supported and evaluative elements of novice teachers' rehearsals. Participants ($N = 16$) received the conductor's score for a rehearsal and prepared for the rehearsal. In addition to the score, half of the participants listened to a recorded model of the piece. The group without a recorded model was instructed to *not* find or listen to a recording of the selection. Rehearsals were video-recorded with the camera focused on the conductor. The researchers measured the frequency of teacher verbal behaviors that focused on performance such as air, balance, dynamics, intonation, notes, rhythm, style, tempo and the teaching variables of feedback, listening, and questioning. Following an analysis of the data, the authors reported that listening to a recorded model had no meaningful impact on preservice teachers' verbalizations. The teachers' verbalizations

tended to reflect a greater concern for accuracy in the group with access to a recorded model. Positive feedback was more frequent than negative feedback for both groups.

Madsen and Duke conducted a number of studies (1985a, 1985b, 1987) examining music teacher undergraduate students' perceptions of teacher feedback during instruction. The first study (1985a) assessed the participants' ($N = 109$) perceptions of teacher approval/disapproval given to elementary students compared to the actual responses of the teacher. Participants were fifty-nine music education students and fifty music therapy students. Participants viewed and evaluated a 23-minute videotape of a kindergarten general music class teacher's approvals and disapprovals using a seven-point semantic scale (1 = good to 7 = bad). In addition, participants listed an estimated percentage of time that teachers devoted to approval, disapproval, and instruction. Finally, participants provided information concerning their personal experience in teaching, counseling, and/or leadership. The researchers found no significant differences between the two groups. Madsen and Duke categorized the written responses on past experiences into activity, teacher, student, or other. Two independent judges evaluated the responses and indicated that the music education students and music therapy students focused on different aspects of the classroom situation. The music therapy students addressed events related to classroom experiences more than the music education students while the music education students detailed more observations relating to the student.

Madsen and Duke (1985b) examined their previous study (1985a) with the intent of developing an understanding of effective teacher approval/disapproval. Participants for the study were divided into two groups: students who had spent a term studying behavior

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techniques ($n = 87$) and students who had not received such instruction ($n = 156$). A stimulus film comprised of two 13-minute segments involved a teacher in an elementary classroom and the other segment included the same teacher participating in a high school setting. The scripted segment provided five minutes of high-approval, five minutes of low-disapproval, and three minutes of high-approval. Following a viewing of the segment in its entirety, the participants evaluated the observed approvals and disapprovals using two different seven-point semantic differential scales. Participants provided written comments specific to opinions of the prominent points of the film as well as any specific behaviors by the teacher. Madsen and Duke found that both trained and untrained participants viewed approval as beneficial for younger and older students, however each group reported the approval of older students less favorably when compared to approval of younger students. In contrast, disapproval given to the younger students versus older students, as viewed by the two groups, was not as consistent as those concerning approval.

Similar to their previous work (Madsen & Duke, 1985b), Madsen and Duke (1987) investigated the effect of teacher training on the ability to recognize a need for providing approval/disapproval for appropriate/inappropriate student behavior. Participants for this study ($N = 57$) were music majors enrolled in music teacher/therapist education programs. In this study, the researchers compared participants' perceptions of appropriate teacher behavior in response to specific classroom situations before and after a 16-week course in behavioral techniques. The participants viewed 50 examples of student behaviors in assorted classroom settings. Following each example, the participants provided their own recommendation concerning the teacher's response to the

student behavior. The researchers then categorized written responses according to the teacher's verbal behavior: (a) if a teacher should ask a question, (b) if there was verbal praise of the student behavior, (c) if there was verbal disapproval of the behavior, (d) if the teacher tells the student to work on a task, and (e) if the teacher tells the student to do something else. Participants in the study demonstrated substantial changes over the course of the semester and that students could learn to identify situations in which they recognized opportunities to provide conditional approval.

Duke and Henninger (2002) investigated the types of feedback verbalizations while other researchers explored the perceptions of feedback in guided reflection (Chaffin & Manfredo, 2010). Duke and Henninger examined whether third-party observers' perceptions of teaching and learning were affected by different forms of verbal correction when viewed in the context of successful lessons. Fifty-one undergraduate preservice teachers viewed videotapes of two complete private lessons of a fifth-grade student. The first scripted lesson included a directive lesson where the teacher made corrections using specific directives. The second lesson incorporated negative feedback where the teacher corrections simply identified the error and told the student to repeat the task. After viewing each lesson, the participants evaluated how they viewed the student and the teacher in the video by responding to ten statements using a four-point Likert-type scale (strongly disagree to strongly agree). Duke and Henninger reported that in the context of a successful lesson, the verbalizations used to make the corrections in student performance did not affect student attitude or achievement, nor did they affect observers' perceptions of teaching and learning.

Chaffin and Manfredo's (2010) studied four preservice music teachers'

perceptions about verbal and written feedback as well as guided reflections during an

early field experience program. The participants taught six one-on-one private teaching

episodes of approximately 15 minutes in duration. One of the researchers supervised the

episodes and in turn provided written and verbal feedback to each participant.

Participants also provided verbal and written feedback and completed a guided reflection

form following each episode. Using a case study design, the researchers collected data

and analyzed feedback, reflections, and interviews with each of the participants.

Subsequent to data analysis, the authors found that all participants viewed all forms of

feedback as highly effective. The participants acknowledged that the written feedback

was beneficial in serving as a reminder of the previous episode. Chaffin and Manfredo

reported that despite training in different types of feedback, the participants might have

had difficulty identifying basic elements of teacher action.

Teaching self-evaluation. I identified several studies in which researchers

investigated participant teaching self-evaluation (i.e., Rosenthal, 1985; Hamann,

Lineburgh, & Paul, 1998; Madsen, Standley, Byo, & Cassidy, 1992), teaching intensity

(Cassidy, 1993; Madsen, Standley, & Cassidy, 1989), use of instructional time (Dorfman,

2010; Worthy, 2005), conducting self-evaluation (Yarbrough, 1987), keyboard skills

(Kostka, 1997), and select methodologies, (Mason, 2008; Steele, 2009).

Rosenthal (1985) provided a description and analysis of behavioral changes in a

group of prospective teachers underwent as they attempted to modify their teaching using

behavioral self-assessment strategies. Music majors ($N = 14$) enrolled in a semester—

long course designed to prepare students to teach elementary general music participated.

Each undergraduate peer-taught four, five-minute lessons labeled as the pretest, practicum I, practicum II, and a final posttest. Following the pretests, the college class received instruction on and examples of teaching behaviors such as model performance, stick symbols, verbal behaviors, and teaching signals (preps). Participants completed additional lesson plans and were instructed in developing musical tasks from simple to complex and how lessons should involve many teaching cycles. At the conclusion of the treatment, the participants taught the practicum I episode. Following the episode, a brief segment was analyzed for the teaching behaviors and discussed with the class with the participants completing an author-created behavior analysis form with a peer. Participants then modified the first practicum and re-taught the lesson as practicum II followed again by group and self-analysis. Rosenthal suggested that behavioral self-assessment, while coupled with discussion and evaluation, might have made the participants aware of cycles of teaching and to modify behaviors within the cycles. Analysis revealed the participants increased in different types of student responses, teaching prompting, pacing of instruction, and the organization of the lesson.

Madsen, Standley, Byo, and Cassidy (1992) investigated self-evaluation skills of 25 senior music education students. The authors examined the teaching and monitored instrumental music education students' use of a variety of teaching and self-evaluation skills during a 3-week summer intensive seminar. Participants received instruction on observation techniques that focused on student on-task, teacher approval, student/teacher interactions, teacher intensity, and conducting behaviors. Following the treatment, the participants completed a 30-minute peer-teaching episode in which they taught a song by rote and were videotaped for future review and evaluation. The final week of instruction

included a self-analysis of a 30-minute rehearsal. Participants completed a self-assessment form. The researchers gathered data from the videos, observation forms, and a self-assessment summary form. The student teachers' self-assessment forms were compared with experienced observers' forms and demonstrated high reliability (.82). Experienced observers also evaluated the final videotapes for each subject with a rate of .96 for interobserver reliability. The authors found that student teachers estimated an average of 88% of their lesson instruction included high teacher intensity. Madsen and colleagues further reported that despite additional treatment and instruction on behavioral evaluation, participants still evaluated themselves more positively than the experienced evaluators.

Hamann, Lineburgh, and Paul (1998) investigated relationships between self-evaluation, teaching effectiveness, and social skill development. The purpose of the study was to determine if any relationships between the adjudicated effectiveness scores of preservice teachers, assessed by the *Survey of Teaching Effectiveness* (STE) (Hamann & Baker, 1985), and their social skills scores, assessed by the *Social Skills Inventory* (SSI) (Riggio, 1989) existed. Participants ($N = 138$) enrolled in a music method class at three universities taught music lessons in a classroom setting. At the beginning of the study, participants completed the *SSI*. Each participant videotaped a classroom teaching lesson , which was then evaluated for teaching effectiveness utilizing the *STE*. Two experts ($r = .96$) evaluated the teaching episodes for each subject using the *STE*. Through a regression analysis, the authors found a significant relationship between teaching effectiveness scores and certain social scores. Specifically, social skills identified as Emotional Expressivity (skill in nonverbal communication), Emotional Sensitivity (skills in

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receiving and interpreting nonverbal communication), and Social Control (individual's ability to engage others in social discourse) scores were compared with total scores from the *STE*. Hamann and colleagues reported that participants who had highly rated teaching episodes reported high scores on the Emotional Expressivity scale. In addition, Emotional Sensitivity and Social Control scores appeared to be an effective predictor of teaching effectiveness and could serve as an indicator of teaching potential.

In the current review of literature, I found studies in which researchers used self-evaluation of participants' teaching concerning teacher intensity (Cassidy, 1993; Madsen, Standley, & Cassidy, 1989). In their 1989 study, Madsen et al. investigated whether high and low contrast in teacher intensity could be quickly taught to, and then demonstrated by, preservice music teachers ($N = 94$), and whether participants untrained in the concept of intensity could recognize these contrasts. The authors defined teaching intensity as the attributes of enthusiasm combined with a sense of timing in relation to classroom management and effective instruction. The researchers divided participants into one experimental (student teachers, $n = 20$) and three control groups: (a) freshmen, $n = 23$; (b) seniors, $n = 22$; (c) graduate students, $n = 29$. The experimental group received 90 minutes of training on teacher intensity across several specific music activities. The participants then demonstrated these contrasts in short peer teaching episodes. Each participant demonstrated high and low teacher intensity contrasts for one minute while teaching a self-selected music activity. Each of the one-minute demonstrations were videotaped and evaluated by the participants using a 10-point intensity scale. The student teachers selected the five best teachers in the group then defined teacher intensity and explained the particulars of high and low teacher intensity. The researchers found that the

student teachers trained in demonstrating intensity scored higher than those groups that did not receive the training.

Cassidy (1993) compared students' self-evaluation and instructor evaluation via the researcher-created *Instruction* and *Delivery Forms*. Ten junior-level music education majors enrolled in an elementary music methods course (with no prior music teaching experience) participated in the study. The course attempted to cover a variety of topics including classroom management techniques, elementary music methodologies, current research, and combined these in the development of effective teaching strategies. Participants taught four, 30-minute elementary music lessons. For the first lesson, students taught a song by rote and for the second lesson added the use a guitar. The third lesson focused on a music concept (selected by the participant), while participants taught a simple song, a rhythmic ostinato, and then combined the two in the fourth lesson. The four lessons were videotaped for future analysis using the *Delivery* and *Instruction Forms*. The *Delivery Form* allowed the observer to indicate teacher behavior in four categories: enthusiastic delivery of academic information, inappropriate noise behavior, inappropriate motor behavior, and inappropriate passive behavior. The *Instruction Form* allowed evaluation of the teachers' behavior in five categories: accurate and appropriate instruction, too much information, too little information, redundant information, and incorrect information. The researcher used student and instructor evaluations as data for the study. Participants demonstrated an improvement in teacher intensity across all four lessons in both appropriateness and effectiveness of delivery. Following the analysis of the *Delivery Form* responses, the researcher found a strong relationship between enthusiastic delivery of academic information, inappropriate noise behavior,

inappropriate motor behavior, and inappropriate passive behavior. In contrast, on the *Instruction Form*, participants showed minimal agreement between the instructor and the participants across the categories of accurate and appropriate instruction, too much information, too little information, redundant information, and incorrect information. The participants consistently scored themselves higher than the researcher on both forms. The utilization of the forms for practice evaluations, however, appeared to lower the degree of disagreement.

Researchers Dorfman (2010) and Worthy (2005) examined self-evaluation in relation to use of time of preservice teachers during instruction. Dorfman investigated relationships between the proportion of time spent on particular pedagogical behaviors and preservice teachers' ($N = 9$) perceptions of their own time use during instruction. Examined pedagogical behaviors included total lesson time, setup time, time spent talking, time spent modeling, and student performance. The participants were all junior-senior-level music education majors enrolled in the same music methods course. Participants videotaped an average of four lessons throughout the semester. Following each lesson, participants reviewed the video and evaluated their teaching using a researcher-designed self-evaluation form. The researcher designed the form to elicit information about components of a lesson plan, the execution of the lesson plan, and elements of self-evaluation. Two graduate research assistants analyzed the recordings for the following time allotments: (a) total lesson time, (b) set up time, (c) time spent talking, (d) time spent modeling, and (e) student playing time. The greatest amount of time was spent by participants' talking and the least amount of time was dedicated to modeling correct technique, tone, and other skills. The participants spent more than half of the

lesson time talking. In participants' self-evaluations, they demonstrated that the procedures they followed during the lessons had enabled the students to accomplish the goals and objectives of that lesson.

Worthy (2005) examined the effectiveness of self-evaluation while attempting to improve the allocation of selected teacher and student behaviors in lab rehearsals. The participants ($N = 14$) conducted four lab rehearsals that were videotaped for self-analysis. Following each rehearsal, the students completed a self-evaluation form and viewed the videotapes. Participants utilized the SCRIBE: Simple Computer Recording Interface for Behavioral Evaluation software to collect frequency and duration data on specific teacher behaviors such as talking and modeling and specific student behaviors such as full ensemble performance, section performance, individual performance, and talking observed. Worthy found that participants tended to include a large amount of non-essential verbal instruction in the first rehearsal, which resulted in a higher percentage and longer average mean duration of teacher talking. Participants often indicated that they were surprised by the amount of rehearsal time devoted to teacher behaviors versus student behaviors. Results indicated that as participants progressed through the four rehearsals, the percentage of time devoted to teacher behaviors decreased.

Self-observation played a role in a study investigating the relationship of behavioral self-assessment to the achievement of basic conducting skills (Yarbrough, 1987). Yarbrough compared data obtained from the students' ($N = 85$) self-evaluations, which she subsequently analyzed with a content analysis of their self-evaluative critiques and explored possible relationships to posttest conducting achievement. Participants took part in six conducting practica. Following each practicum, the participants evaluated

themselves using observation forms developed for the conducting course. Each practicum had a focused evaluation task such as beat patterns, preparations, tempo, releases, or eye contact. The third and sixth practicums added a written student self-critique to the evaluations. Following the final practicum, participants conducted a posttest that included brief prepared conducting episodes that were videotaped and then evaluated by the instructor and a reliability observer. The written critiques were coded for frequency and percentage of verbal self-approval/disapproval and instructional statements. The self-evaluation forms were also analyzed for the frequency and percentage of "correct" and "incorrect" marks for the focused evaluation tasks. Yarbrough found that participants gave themselves a higher percentage of correct marks during the self-evaluation when using the self-observation form. In the written self-critiques, participants supplied more disapproval than approval remarks and few amounts of self-instructional comments were provided as part of the critiques. In sum, Yarbrough reported that participants who scored higher on the posttest were likely to evaluate themselves higher on the self-observation forms than in a written response. Verbal self-approval did not appear to have a correlation to posttest improvement.

Kostka (1997) explored the impact of self-evaluation on keyboard skills. The primary purpose examined the relationship between college students' perceptions of "knowing" and "valuing" five selected skills on the piano. The second purpose was whether a successive-approximations approach to learning the skills plus self-evaluation would affect students' perceptions of "knowing" and "valuing." Thirty-two music majors participated in the pretest posttest study. As a pretest, participants answered a questionnaire listing five piano skills: (a) hand position, (b) sight-reading ability, (c)

correct fingering, (d) musicality, and (e) good technique. The participants ranked the skills in order of importance to a musician and then ranked them in order of their individual perceived ability. As treatment, the researcher taught each of the five skills over a two-week period of time. At the end of the treatment period, the students utilized a rating scale of 1-7 (poor to excellent) to evaluate self-performances of the tasks. The instructor evaluated the students individually using the same scale during the same performance. Following the performances, each participant received written feedback on each performance task with encouragement and suggestions for improvement. The students completed a follow-up questionnaire identical to the pretest as a posttest. Based on the data analysis, Kostka found that students felt the least competent in sight-reading and musicality skills, with sight-reading being the most challenging task to achieve. Kostka reported a high degree of correlation (.90) between actual self-assessment scores and posttest perceptions of "knowing." In contrast, correlations between student and teacher assessments were relatively low. The participants' increased knowledge and value became more closely related following instruction of specific strategies and self-assessment procedures.

Summary on preservice music teacher instruction. Based on the current literature review, I found 113 studies (Table 3.3) that focused on the learning process, music coursework, the use of technology, diversity, design of lesson plans, development of aural skills, and teaching strategies for instruction of MTE undergraduates. After reading these studies, it seems clear that preservice teachers benefit from authentic context experiences, academic GPA shared a relationship with musical performance, technology was not utilized to its fullest, immersion in various cultures improved comfort

and awareness levels, and reflection and feedback enhanced preservice teachers' lesson planning.

Table 3.3

Studies Reviewed Categorized as Preservice Teacher Instruction

Author	Purpose	Participants	Setting	Duration	Research Design
Abrahams, F. (2009)	To explore the relationship the college methods class and the off-campus practicum experience	(N = 12) Music education majors and inservice teachers	Not Specified	12 weeks	Grounded theory
Addo, A. O. (2009)	To explore how teacher educators prepare educators to recognize diverse arts, cultures, and communities	(N = 23) Undergraduates	1 University and 1 Community	1 Semester	Ethnography (Case study)
Amoriello, L. (2010)	To identify institutional expectations for piano proficiency, students' perceived needs for proficiency, how these needs parallel or contradict institutional expectations, and how the researcher's teaching is re-shaped through critical reflection on her practice	(N = 10) Undergraduate music majors	1 University	1 Semester	Ethnography (phenomenological case study)

Berg, M. H. & Lind, V. R. (2003)	To investigate the use of electronic portfolios in an undergraduate music education course	(*N* = 10) Undergraduate music education majors	1 University	1 Semester	Ethnography (Case study)
Berg, M. H., Woody, R. H. & Bauer, W. I. (2002)	To examine the focus of attention and reflective thinking in undergraduate music education students' retrospective reports of video-taped teaching episodes	(*N* = 24) Undergraduate music education majors	1 University	1 Session	Experimental design
Bergee, M. J. (2002)	To examine and compare the effects of both direct and mediated experiences on preservice music teachers' classroom management self-efficacy	(*N* = 60) Undergraduate music education majors	1 Midwestern university	4 Sessions	Experimental design
Bowles, C. & Runnels, B. D. (1998)	To investigate attitudes of the three primary participants in the experience regarding aspects and components of the student teaching experience in music	(*N* = 61) Student teachers, cooperating teachers, and university supervisors	10 Universities	1 Session	Survey design

Brand, M. (1982)	To measure the effects of the student teaching experience and the cooperating teachers' classroom management beliefs and skills on music student teachers	(N = 94) Student teachers and cooperative teachers	2 Universities	1 Session	Experimental design
Brittin, R. V. (2005)	To describe the use of instrumental method-book material as seen in the lens of preservice and experienced teachers' lesson plans	(N = 58) Preservice and experienced teachers	7 Universities	1 Session	Mixed-method design
Broomhead, P. (2009)	To develop and test a problem-solving-based teaching strategy emphasizing individual learning of expressive performance that would be administered in an ensemble session	(N = 46) Undergraduate music students	1 University	4 Sessions	Experimental design
Browning, B. P. & Porter, A. M. (2007)	To target a particular music teaching effectiveness behavior (eye contact)	(N = 10) Undergraduate music education majors	2 Midwestern universities	3 Sessions	Experimental design

Butler, A. (2001)	To understand the conceptions that preservice teachers bring with them to their early teaching experiences, as well as how those conceptions interact with initial teaching encounters	($N = 15$) Undergraduate music education majors	1 Southwestern university	3 Sessions	Mixed methods design
Byo, J. L. & Cassidy, J. W. (2005)	To draw conclusions about the success of String Projects as facilitators of growth in string music education in diverse settings	($N = 1458$) Project directors, master teachers, student teachers, community children, and parents of children	13 Universities	1 Session	Survey design
Campbell, M. R. (1999)	To explore and learn from novice music teachers how it is they learn to teach general music	($N = 43$) Undergraduate music education students	1 University	2 Years	Ethnography (Case study)

Cassidy, J. W., (1993)	To explore the use of the Instruction and Delivery Forms for self-observation of teacher intensity behaviors	(N = 10) Undergraduate music education students	1 Southern university	4 Sessions	Correlational design
Chaffin, C. & Manfredo, J. (2010)	To examine the perceptions of 4 preservice music teachers regarding elements of verbal and written feedback as well as guided reflection during early field experience program at a large Midwestern university	(N = 4) Undergraduate education majors	1 Midwestern university	6 Sessions	Ethnography (Case study)
Conkling, S. W. (2003)	To uncover the reflective thinking generated among a group of preservice choral music teachers working at a professional development site	(N = 7) Undergraduate and graduate music education majors	1 University	1 Semester	Ethnography (Case study)

Cremata, R. (2010)	To examine the uses of music technology in music education programs in two universities	*(N* not specified.) Students, faculty, administration, and alumni in schools of music	2 Universities	2 Semesters	Ethnography (Case study)
Darrow, A. & Johnson, C. (2009)	To determine whether or not a relationship exists between preservice music therapists' and teachers' nonverbal behaviors and their perceived rapport	*(N* = 56) Music education and music therapy majors	1 Midwestern university	1 Session	Correlational design
Dekaney, E. M. (2003)	To investigate the effect of computerized versus classroom instruction on musicians' ability to correctly pronounce English words phonetically transcripted into the International Phonetic Alphabet	*(N* = 63) Graduate and undergraduate music students	1 Southern university	3 Sessions	Experimental design

Della-Pietra, C. J. & Shehan Campbell, P. (1995)	To examine student collaboration and the resultant learning that occurs through interaction with others within their environment, that is, their small collegial group	($N = 2$) Undergraduate music education majors	1 University	5 Weeks	Ethnographic (Case study)
Dorfman, J. (2010)	To investigate the relationships between proportions of time spent on particular pedagogical behaviors and preservice teachers' perceptions of their own teaching, as measured by reflective self-evaluations	($N = 9$) Undergraduate music education majors	1 Midwestern university	5 Months	Correlational design
Draves, T. J. (2008)	To examine the nature and extent of the student teacher/cooperating music teacher relationship	($N = 8$) Student teachers and cooperating teachers	1 Midwestern university	1 Semester	Ethnographic (Case study)
Draves, T. J. (2009)	To investigate the reliability of portfolio assessment in student teaching	($N = 13$) Undergraduate music education teachers	1 Midwestern university	1 Semester	Correlational design

Duke, R. A. & Benson, C. (2004)	To determine whether teachers' attention to the progress of one of the least skilled students in the class would result in systematic differences in instructional pacing	(*N* = 42) Undergraduate music education and performance majors	1 Midwestern university	6 Class days	Experimental design
Duke, R. A. & Blackman, M. D. (1991)	To compare the evaluation ratings of observers who were assigned one of four different observation tasks, and to determine the relationship between events recorded during the course of the observation period and subsequent evaluation ratings	(*N* = 200) Music and nonmusic education majors	1 Southern university	1 Session	Correlational design
Duke, R. A. & Henninger, J. C. (2002)	To determine whether third-party observers' perceptions of teaching and learning are affected by different forms of verbal correction when viewed in the context of successful lessons	(*N* = 51) Undergraduate music majors	2 Universities	1 Session	Experimental design

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Duling, E. (2010)	To investigate possible relationships between music and academic achievement among music undergraduates	(*N* = 34) Undergraduate music education majors	1 University	2 Semesters	Correlational design
Emmanuel, D. T. (2005)	To examine the personal conceptualizations of preservice music education students by focusing on how they talked about learning to teach music in the context of cultural diversity, and to probe the relationships among these conceptualizations prior to, during, and after an immersion internship experience	(*N* = 5) Undergraduate and graduate music education majors	1 University and 1 Community	3 Weeks	Ethnographic (Case study)
Fredrickson, W. E. & Pembrook, R. G. (1999)	To examine the perceptions of music students during a semester-long, preservice teaching experience and determine what factors most strongly affect perception	(*N* = 30) Undergraduate music majors	1 University	6 Weeks	Experimental design

Fredrickson, W. E. & Pembrook, R .G. (2002)	To examine the general perceptions of teachers during various points in their careers	(*N* = 30) Undergraduate music education students	1 Midwestern university	1 Semester	Experimental design
Goolsby, T. W. (1996)	To compare in real time the use of rehearsal time during classroom periods by experienced, novice, and student music teachers during instrumental music rehearsals	(*N* = 30) Experienced, novice, and student music teachers	4 Universities	3 Rehearsals	Experimental design

Goolsby, T. W. (1997)	To examine if expert music teachers spent significantly more rehearsal time in performance, spend less rehearsal in verbal instruction, and stop for shorter durations to provide academic instruction, then the context of the verbal instructions made during rehearsals may differ significantly from those aspects addressed by novice and student teachers.	(*N* = 30) Experienced, novice, and student music teachers	3 Universities	1 Semester	Experimental design
Hamann, D. L., Baker, D. S., McAllister, P. A., & Bauer, W. I . (2000)	To determine what effect music teacher classroom delivery skills or lesson content had on university music students' perceptions of lesson or teacher appeal by student academic standing	(*N* = 511) Graduate and undergraduate music students	3 Universities	1 Session	Experimental design

Hamann, D. L. & Ebie, B. (2009)	To determine if participants believe that participation in music education methods courses would provide adequate training to address concerns they had about their teaching either within or outside their area of familiarity	(*N* = 159) Undergraduate music education majors	Not Specified	1 Session	Experimental design
Hamann, D. L., Lineburgh, N., & Paul, S. (1998)	To determine whether there were any relationships between adjudicated teaching effectiveness scores, and observation-based assessment instrument, and social skills scores, a self-report instrument, of preservice teachers	(*N* = 138) Undergraduate music education majors and elementary/ secondary education majors	3 Universities	1 Session	Correlational design
Haston, W. & Leon-Guerrero, A. (2008)	To better understand what influences preservice instrumental music teachers acquisition of pedagogical content knowledge	(*N* = 6) Undergraduate student teachers	Not Specified	1 Session	Ethnographic (Case study)

Henninger, J. C. (2002)	To determine whether the perceptions of observers who are informed of the proximal goals of instruction differ from those who are not so informed	($N = 120$) Undergraduate music education majors	6 Universities in the United States	1 Session	Experimental design
Henninger, J. C., Flowers, P. J., & Councill, K. H. (2006)	To examine the effect of teacher experience on student progress and performance quality in an introductory applied lesson	($N = 24$) Experienced and preservice teachers	1 University	1 Session	Experimental design
Hopkins, M. T. (2002)	To compare the effectiveness of computer-based expository and discovery methods of instruction for the aural recognition of selected musical concepts	($N = 49$) Undergraduates enrolled in music appreciation and theory courses	1 Northeastern university	1 Session	Correlational design

Hourigan, R. M. (2007)	To examine the perceptions of participants regarding teaching music to students with special needs as part of a fieldwork experience	(*N* = 4) Undergraduate music education majors	1 University	8 Weeks	Ethnographic (Case study)
Hourigan, R. M. (2008)	To examine the use of student-written cases as part of an instrumental music methods course	(*N* =5) Undergraduate music education majors	1 Midwestern university	8 Weeks	Ethnographic (Case study)
Hourigan, R. M. (2009)	To examine phenomenologically a special needs field work experience through the perceptions of seven participants	(*N* = 7) Preservice teachers, a music teacher educator, an inservice music teacher and the researcher	1 University	8 Weeks	Ethnographic (Case study)
Hourigan, R. M. & Scheib, J. W. (2009)	To examine the perceived requisite skills and understandings needed for a successful student teaching experience	(*N* = 6) Instrumental undergraduate student teachers	1 University	16 Weeks	Ethnographic (Case study)

Huang, H. (2002)	To examine the contents, goals, and teaching approaches of multicultural lessons developed by preservice teachers	(N = 70) Preservice teachers	1 Midwestern university	2 Semesters	Experimental design
Irwin, D. R. (2006)	To examine both novice and expert choral directors' perceptions of effective teaching when applying Rehearsal Frames to a choral setting	(N = 48) Undergraduate and experienced choral teachers	1 University	1 Session	Mixed methods design
Johnson, C. M. (1998)	To investigate how instruction in the use of specific rhythm nuances influence the timings of a musical performance	(N = 30) Undergraduate and graduate music majors	1 Midwestern university	1 Session	Correlational design
Johnson, C. M. (2000)	To examine the effect of instruction in the use of specific rhythm nuances on the timings of a musical performance	(N = 40) Undergraduate and graduate music majors	1 Midwestern university	2 Sessions	Correlational design

Johnson, C. M., Darrow, A. & Eason, B. J. A. (2008)	To determine if a relationship exist between skilled and novice music teachers' nonverbal behaviors and their perceived effectiveness and rapport	($N = 108$) Music education and music therapy majors	3 Universities	1 Session	Mixed methods design
Johnson, C. M., Price, H. E. & Schroeder, L. K. (2009)	To determine if preservice music educators could discriminate between novice and expert choral directors irrespective of the proficiency of the choral ensemble	($N = 242$) Music education majors	6 Universities in the United States, Brazil, Japan, and Italy	1 Session	Correlational design
Killian, J. & Dye, K. G. (2009)	To examine ongoing efforts to increase teaching effectiveness among preservice music educators using a learner-centered reflective practice model	($N = 43$) Undergraduate music education majors	Not Specified	3 Semesters	Experimental design

Korenman, L. M. & Peynircioglu, Z. F. (2007)	To examine the effects of presentation modality and learning style preference on peoples' ability to learn and remember unfamiliar melodies and sentences	(N = 40) University students	1 Eastern university	2 Sessions	Experimental design
Kostka, M. J. (1997)	To investigate the relationship between college students' perceptions of "knowing" and "valuing" five selected skills on the piano, and to determine whether a successive-approximations approach to learning the skills plus self-evaluation would affect students' perceptions of "knowing" and "valuing"	(N = 32) Undergraduate music majors	1 Southwestern university	15 weeks	Experimental design
Madsen, C. K. & Duke, R. A. (1985a)	To investigate perceived teacher approval/disapproval	(N = 243) Music education majors	1 Southern university	1 Session	Experimental design

Madsen, C. K. & Duke, R. A. (1985b)	To assess subjects' perceptions of teacher approval/disapproval given to elementary students compared to the actual responses of the teacher	($N = 109$) Undergraduate and graduate music education and music therapy majors	Not Specified	1 Session	Experimental design
Madsen, C. K. & Duke, R. A. (1987)	To test the effect of training on the ability to recognize the need for giving both approval/disapproval for appropriate/inappropriate behavior as opposed to giving only disapproval for inappropriate behavior	($N = 57$) Undergraduate music education therapy majors	1 University	2 Sessions	Experimental design
Madsen, C. K., Standley, J. M., Byo, J. L., & Cassidy, J. W. (1992)	To teach and monitor instrumental music education preinterns' use of a variety of teaching and self-evaluation skills during a three-week intensive seminar	($N = 25$) Undergraduate music education majors	1 Southeastern university	3 Phases	Experimental design

Madsen, C. K. Standley, J .M., & Cassidy, J. W. (1989)	To investigate teacher intensity, the global attributes of enthusiasm combined with an astute sense of timing in relation to classroom management and effective subject presentation and delivery	(N = 94) Undergraduate and graduate music education majors	Not Specified	2 Sessions	Experimental design
Madsen, K. (2003)	To examine whether accuracy and delivery of teacher instruction and student attentiveness would affect evaluative perceptions of teacher effectiveness	(N = 168) Students grades 6-12, undergraduate music education majors, and experienced teachers	1 University	1 Session	Experimental design
Madsen, K. & Cassidy, J. W. (2005)	To examine preservice and experienced teachers' ratings and comments on teacher effectiveness and student learning after observing video-taped music classes	(N = 78) Undergraduate and graduate music majors	2 Universities	1 Session	Experimental design

Mason, E. J. (2008)	To investigate preservice teachers' ability to identify two different methodologies used in teaching elementary general music when viewing teaching excerpts	*(N* = 134) Undergraduate music education majors	8 Universities in the United States	1 Session	Experimental design
McArthur, K. G. (2007)	To examine secondary preservice content area teachers' language and thinking about reading, content, and their relationship in the context of a university content area methods course	*(N* = 19) Undergraduate preservice teachers from multiple disciplines including music	1 Southwestern university	1 Semester	Grounded theory
McDowell, C. (2007)	To trace one class of ten music education majors through their field experiences	*(N* = 10) Undergraduate music education majors	1 Midwestern university	3 Semesters	Ethnographic (Case study)

Misenhelter, D. D. (2000)	To examine scripted rehearsals in order to determine if preprofessional teachers could differentiate between two philosophies by presenting them with a variety of process-oriented (conceptual) and product-oriented (nonconceptual) strategies in ensemble settings	($N = 108$) Undergraduate music education majors and elementary education majors	1 University	Not specified	Experimental design
Montemayor, M. & Moss, E. A. (2009)	To investigate the effects of aural model-supported rehearsal preparation on selected behavioral and evaluative elements of a novice teachers' rehearsal	($N = 16$) Undergraduate music education majors	1 Northern university	4 days	Experimental design
Mutschlecner, T. M. (2007)	To construct, validate, and administer a diagnostic test of cello technique for use with undergraduate cellists	($N = 30$) Undergraduate cellists	1 Southeastern university	1 Session	Correlational design

Paul, S. J. Teachout, D. J., Sullivan, J. M., Kelly, S. N., Bauer, W. I., & Raiber, M. A. (2001)	To examine the relationship between the frequency of particular authentic-context learning activities during undergraduate instrumental music teacher training and the initial teaching performance of undergraduate instrumental music student teachers	($N = 30$) Undergraduate instrumental music education majors	4 Universities in the United States	1 Session	Correlational design
Posegate, S. C. (2009)	To gain an increased understanding of changes in interns and cooperating teachers during student teaching in music	($N = 10$) Student teachers and cooperating teachers	1 University	2 Sessions	Ethnographic (Case Study)

Price, H. E. (1992)	To examine the effects of instruction, teaching practicum, feedback from the course instructor, and video-taped self-observation on undergraduates' use of complete sequential patterns and sequential-pattern components	($N = 18$) Undergraduate music education majors	1 University	1 Semester	Experimental design
Price, H. E., Ogawa, Y., & Arizumi, K. (1997)	To examine whether some analysis techniques of student/teacher interactions widely used throughout the U.S. could be applied to a music instruction setting in Japan	($N = 26$) Japanese and American music education students	Not Specified	1 Session	Correlational design
Prickett, C. A. & Bridges, M. S. (1998)	To examine whether college students can hear a standard tune that music educators think should be known by middle schoolers and can identify it	($N = 579$) Music education, music therapy and elementary education majors	Not Specified	Not specified	Experimental design

Prickett, C. A. & Bridges, M. S. (2001)	To examine whether a basic song repertoire exists in the senior citizen population and compare this repertoire with that of music education students	(*N* = 167) Undergraduate music education majors and senior citizens	10 Universities and 1 community	1 Session	Experimental design
Prickett, C. A. & Duke, R. A. (1992)	To determine the degree to which the assignment of differential observation tasks affects subsequent evaluation of the constituent components of a music lesson and whether the extensive experience in music settings influences their evaluations	(*N* = 240) Undergraduate music education majors and non music education majors	2 Southern universities	1 Session	Experimental design
Reynolds, A. M. (2003)	To examine the perceptions of participants in a service-learning partnership	(*N* = 9) Undergraduate music education majors	1 Southern university and 1community	1 Semester	Ethnographic (Case study)

Reynolds, A. M. & Conway, C. M. (2003)	To examine service-learning as a music teacher preparation practice within an elementary general music methods course	(*N* = 10) Undergraduate music students, elementary principal, classroom liaison, and teacher-researcher	1 University and 1 Community	Not specified	Ethnographic (Case study)
Reynolds, A. M., Jerome, A., Preston, A. L., & Haynes, H. (2005)	To examine perceptions of participants in a service-learning music education partnership	(*N* =23) Undergraduate music education majors, first grade teachers, and elementary principal	1 Southern University and 1 community	7 Weeks	Ethnographic (Case study)
Riley, P. E. (2009)	To explore general music teaching and learning via video-conferencing between preservice music teachers in the U.S.A. and students at an elementary school in Mexico	(*N* = 9) Undergraduate music education majors	Not Specified	2 Years	Ethnographic (Case study)

Russell, J. A. (2007)	To examine and describe the factors that influence an undergraduate music education major's investment in instrumental techniques courses	(*N* = 6) Music education majors and teaching assistants	1 Western university	3 Sessions	Ethnographic (Case study)
Russell, J. A. (2009)	To examine and illuminate the environmental factors that may influence an undergraduate music major's investment in instrumental techniques courses taught by a graduate teaching assistant	(*N* = 5) Undergraduate music education majors and graduate teaching assistants	1 University	3 Sessions	Ethnographic (Case study)
Sang, R. C. (1985)	To seek quantitative support for a theoretical model of instructional effectiveness for beginning teachers in instrumental teachers	(*N* = 7) Undergraduate music education majors	1 University	2 Semesters	Correlational design
Schleuter, L. (1991)	To examine preactive and postactive curricula thinking of student teachers in elementary general music	(*N* = 3) Undergraduate student teachers	1 Northeastern university	1 Semester	Ethnographic (Case study)

Schmidt, M. (2005)	To examine preservice teachers' understandings of lesson planning prior to extended formal instruction in educational methods	(*N* = 10) Music education and music performance majors	1 Southwestern university	1 Year	Ethnographic (Case study)
Schmidt, M. (2010)	To explore the value that six preservice\ teachers attributed to peer teaching, early field experiences, student teaching, and self-arranged teaching experiences engaged in during their university education	(*N* = 6) Undergraduate instrumental music education majors	1 Southwestern university	2 Years	Ethnographic (Case study)
Sheldon, D. A. (2000)	To examine experienced and inexperienced teachers' perceptions of band music content and quality in three experimental settings	(*N* = 60) Undergraduate instrumental music education majors	Not Specified	3 Sessions	Experimental design

Sheldon, D. A. & DeNardo, G. (2004)	To examine differences in levels of observational expertise between perspective music education majors and junior music education majors	($N = 52$) Music education majors and perspective freshman	1 Midwestern university	1 Session	Experimental design
Sheldon, D. A. & DeNardo, G. (2005)	To examinee if higher-order thinking skills and observation tasks may be a valid measure of a valued teacher characteristic based on previous research	($N = 246$) Perspective freshman undergraduate music education majors	1 Midwestern university	1 Session	Correlational design
Siebenaler, D. (2005)	To apply the service-learning model to teacher education in the music department, and to provide a descriptive case study of the experience	($N = 15$) Undergraduate music education majors and elementary education majors	1 University	1 Semester	Ethnographic (Case study)

Soto, A. C., Lum, C. & Shehan Campbell, P. S. (2009)	To document the process and outcomes of a university-school collaboration, a year long partnership devised provide a civic engagement of university music education students and faculty with children and teachers within a rural location of a western state	($N = 33$) Undergraduate music education majors	1 Western university and community	8 Months	Ethnographic (Case study)
Standley, J. M. (2000)	To examine to what extent perspective teachers are intolerant of diversity and how might such attitudes be changed	($N = 104$) Undergraduate music education majors	1 University	2, Six week Sessions	Experimental design
Standley, J. M. & Madsen, C. K. (1991)	To develop a task that would differentiate levels of expertise of music educators and therapists and to ascertain whether such expertise is independent of years of teaching experience	($N = 150$) Preservice and inservice teachers	Not Specified	1 Session	Experimental design

Stegman, S. F. (2001)	To investigate six choral-music student teachers' perceptions of successes and problems during instruction when encouraged to reflect on their teaching through guided questioning	($N = 6$) Choral music student teachers	1 Midwestern university	16 Weeks	Ethnographic (Case study)
Stegman, S. F. (2007)	To explore the content of reflective dialogues between student teachers in music and their cooperating teachers, as well as to understand the effects of reflective dialogue on professional development	($N = 12$) Music student teachers and cooperative teachers	1 Midwestern university	8 Sessions	Ethnographic (Case study)
Teachout, D. J. (1997)	To compare the responses of preservice teachers and experienced teachers when asked, "What skills and behaviors are important to successful music teaching in the first three years of experience?"	($N = 70$) Preservice and experienced music teachers	5 Universities	1 Session	Experimental design

Vandivere, A. H. (2008)	To explore the nonverbal communication behaviors and role perceptions of preservice band teachers, and the extent to which these individuals found meaning and value in theatre seminars with respect to those factors	($N = 3$) Undergraduate instrumental music education majors	1 Southern university	3 Sessions	Ethnographic (Case study)
VanWeelden, K. & Whipple, J. (2005)	To examine the effect of a long-term field experience, which included planning and teaching, on music education students' perceptions of music for secondary students with special needs	($N = 28$) Undergraduate music education majors	1 University	10 Weeks class instruction / 5 weeks field experience	Experimental design

VanWeelden, K. & Whipple, J. (2007)	To compare the effect of a long-term field experience on music education students' attitudes and perceptions of music for secondary students with special needs within two subpopulations	(*N* = 59) Undergraduate music education majors	1 University	9 Weeks class instruction & 6 weeks field experience	Experimental design
Wagner, W. G., Tuley, R. J., & Koestler, A. J. (1985)	To assess the effectiveness of an interview skills training program developed for use with undergraduate majors in music education	(*N* = 16) Undergraduate music education majors	1 University	3 Sessions	Experimental design
Wang, J. & Humphreys, J. T. (2009)	To estimate the hours and percentage of time preservice music teachers from one institution actually spent on different styles of music in history, theory, and performance courses within a 4-year music teacher education curriculum	(*N* =80) Undergraduate music education majors	1 Southwestern university	1 Year	Experimental design

Ward-Steinman, P. M. (2006)	To present a description of the development of a university music education department outreach program, of the children's musical culture at the beginning of the program, and of student and preservice teacher reflections after the experience	(N = 15) Undergraduate and graduate music education students	1 University and community	2 Sessions	Experimental design
Wolfe, D. E. & Jellison, J. A. (1990)	To examine perceived differences among three teaching styles and to identify subjects' perceptions of their own teaching styles	(N = 287) Undergraduate elementary education and music therapy, pedagogy, and performance majors	2 Universities	2 Sessions	Experimental design
Worthy, M. D. (2005)	To examine the effectiveness of self-evaluation while attempting to improve the allocation of selected teacher and student behaviors in lab rehearsals	(N = 14) Undergraduate music education majors	1 Southern university	4 Sessions	Experimental design

Yarbrough, C. (1987)	To explore relationships between two types of behavioral self-assessment and post test conducting achievement scores	(*N* = 85) Undergraduate music majors	1 Northeastern university	6 Sessions	Experimental design
Yarbrough, C. & Henley, P. (1999)	To determine whether focusing the attention of evaluators on students versus teacher would affect the assessment of teaching in choral rehearsal situations	(*N* = 176) Undergraduate and graduate music education majors	4 Universities	1 Session	Experimental design
Yarbough, C. & Madsen, K. (1998)	To present rehearsal excerpts demonstrating the presence or absence of effective teaching attributes, to ask students to evaluate them for each of the excerpts, and to compare subjects' ratings with data demonstrating the presence or absence of the attributes	(*N* = 89) Undergraduate and graduate music education majors	1 Southern university	1 Session	Experimental design

Yarbough, C. & Price, H. E. (1989)	To examine extant research in effective teaching and to determine the extent to which results were being applied in music teaching	(N = 79) Undergraduate music education majors and experienced music teachers	5 Universities	1 Session	Experimental design
Yarbough, C., Price, H. E., & Hendel, C. (1994)	To determine the effect of sequential patterns and different modes of presentation on evaluations of music teaching by experienced music and non-music teachers and university music and non-music students	(N = 614) Experienced music and non-music teachers and university music and non-music students	Midwestern and southern universities	1 Session	Experimental design

Miscellaneous Research relating to MTE programs (ensembles, juries, lessons, etc.)

In the course of my literature search, I unearthed several research studies ($n = 7$) that did not readily fit into one of the categories already discussed nor did they rise to the level of magnitude or quantity to justify their own equitable categorization. Spradling (1985) investigated the effects of frequency and duration of instructional periods on student attentiveness and attitude during an instrumental ensemble rehearsal. Participants were university ensemble members (65% music majors and 35% nonmusic majors). Spradling did not report the number of participants in the study. Participants sightread one musical work with each of the two conductors during each experimental session (16 works in 8 sessions). During the episode, two trained observers scanned the ensemble every 15 seconds to record the number of students off task. A third observer served as a time monitor. The observers found 4,840 instances of student off-task behavior during performance and instructional periods. During the performance intervals, 23% of the instances of student off-task behavior were observed across performance intervals while 77% of the intervals were observed during instructional intervals. Spradling concluded that fewer off-task situations occurred during performance periods than instructional periods.

Ciorba and Smith (2009) investigated the use and effectiveness of a *Multidimensional Assessment Rubric* (MAR) to evaluate instrumental and vocal student jury performances. The researcher designed a rubric used to identified three key areas for assessment: (a) musical elements, (b) command of instrument, and (c) presentation. Participants evaluated each area using a five-point scale. Students ($N = 359$) performed for approximately ten minutes in front of the jury panels. Following the performance, the

panel individually completed the MAR for each student. The authors found moderate to high interjudge reliability across the dimensions and that rubric scores related significantly to a student's year in school, whereas the letter grades subsequently applied by jury panels did not relate to the year in school.

Fredrickson (2007) explored music majors' attitudes toward teaching private lessons. The author compared the attitudes of music students in two, large comprehensive universities with those of students from a conservatory ($N = 486$). The sample included undergraduates ($n = 347$) and graduate ($n = 139$) student members of performance ensembles. Participants responded to 28 statements on a questionnaire using a 7-point Likert-type scale. Frederickson found that participants felt positive about teaching private lessons following graduation and just more than half identified monetary reasons as the primary reason for doing so. Participants viewed private lessons as positive to developing their own skills as both performers and teachers. The performers strongly agreed that training is a necessity to be a good teacher and the idea that a good performer is always a good teacher was rejected. In response to questions about teaching, education majors were:

- more willing to teach students that are less skilled or able;

- more inclined to teach improvisation;

- focused on teaching music reading from the beginning;

- more likely to strive for correct notes before musicality;

- focused less on teaching for money;

- connected teaching with improving their own performing skills; and

- less likely to stop teaching to perform.

Recital attendance is a component of many MTE educational programs. Researchers Kinney and Martin (2008) examined undergraduate music education majors' opinions and reported learning outcomes related to recital attendance required by their degree program. The investigators compared groups of underclassmen ($n = 99$) to upperclassmen ($n = 48$), and those with periodic deadlines for completing the requirement ($n = 101$) to those without periodic deadlines ($n = 46$). The researchers designed a survey instrument with three sections: (a) demographics, (b) Likert-type scale response items, and (c) open-ended response items. Kinney and Martin found that participants enjoyed attending the recitals, but the means for the value of the recital requirement itself were lower. The mean for learning outcomes related to evaluative skills were rated the highest among all the survey items. The authors suggested the recitals themselves did have value for the participants.

Hackworth (2006, 2009, 2010) conducted three studies examining vocal hygiene of preservice music teachers. Hackworth (2006) aimed to identify the perceptions of vocal hygiene by preservice music teachers across the nation. The author created a survey to identify personal voice use and its impact on future career goals, impact of behaviors/conditions on the voice, the impact of teaching activities on the voice, and demographic information. One-hundred-forty music education undergraduates from five large universities participated in the study. Hackworth found that 48% of the participants believed the teaching profession is at high risk for voice disorders and 46% believe it is a moderate risk. A majority (60%) of participants believed developing a vocal problem will have an effect on their career while only 9% responded it would not affect their career. The remaining 31% responded "maybe" to the question. Hackworth further instructed

participants to rate several teaching activities (e.g. speaking over a noisy classroom, verbal instruction to students while they play instruments, lunchroom duty, etc.) for vocal stress. When comparing the responses of instrumental preservice teachers to vocal preservice teachers using *t*-tests, differences emerged in two categories. Instrumentalists rated both "demonstrating singing (alone)" and "demonstration singing with students also singing" as contributors to more vocal stress than did vocal majors.

Hackworth (2009) sought to compare perceptions of vocal hygiene at different levels of music teaching experience. Preservice and experienced music teachers ($N = 659$) completed a questionnaire that was based on a prior survey (Hackworth, 2006). Respondents indicated that experienced teachers ranked speaking in noisy environments significantly higher, that is more stressful vocally, than did preservice teachers. Hackworth further reported that similar to her earlier study, a majority of teachers rated the teaching profession at high risk for voice disorders.

The final study in the series of investigations, Hackworth (2010) examined the relationship among music teachers' length of experience, specialty (vocal or instrumental), and ratings of behaviors and teaching activities related to vocal health. Experienced teachers ($n = 208$), preservice teachers ($n = 171$), and instrumentalists ($n = 181$) or vocalists ($n = 198$) responded to an online survey in which they rated selected teaching activities for perceived vocal stress using a 7-point scale. Hackworth found significant influence of teaching experience on four behaviors: speaking in noisy environments, clearing the throat, warming up the voice, and consumption of alcohol. The behaviors of speaking in noisy environments and clearing the throat received unhealthier ratings from experienced teachers while preservice teachers rated vocal warm

up healthier than experienced teachers. When comparing the data of instrumental concentration to vocal concentration, Hackworth reported significant effects in two behaviors, speaking in a noisy environment and clearing the throat. Additional differences emerged between instrumentalists and vocalists between three teaching activities—lunch duty, vocal instruction while students are performing, and singing alone. Ratings for stress by vocalists were higher than instrumentalists in every category.

Summary Research relating to MTE programs (ensembles, juries, lessons, etc.)
Based upon these seven studies in which researchers examined ensemble rehearsals, jury evaluations/performances, perspectives of teaching private lessons, mandatory recital attendance, and vocal hygiene, I posit that college musicians demonstrated a higher degree of off-task behavior during instruction when compared to performance, a rubric for juries demonstrated high interjudge reliability, undergraduates enjoyed attending recitals but did not value it as a requirement, and vocal stress appeared as a concern for both instrumental and vocal music education majors. A Table summary of studies included in this section can be found in Table 3.4.

Table 3.4

Studies Reviewed Categorized as Miscellaneous Studies Relating to MTE

Author	Purpose	Participants	Setting	Duration	Research Design
Ciorba, C. R. & Smith, N. Y. (2009)	To investigate the effectiveness of a multidimensional assessment rubric, which was administered to all students performing instrumental and vocal juries	(N = 359) Undergraduate music majors	1 Midwestern university	1 Session	Correlational design
Fredrickson, W. E. (2007)	To survey current music students across degree programs and levels on their attitudes toward teaching private music lessons	(N = 486) Undergraduate and graduate music majors	2 Universities	1 Session	Survey design
Hackworth, R. S. (2006)	To investigate what students already know or believe about vocal hygiene	(N = 140) Undergraduate music education majors	5 Universities in the United States	1 Session	Survey design
Hackworth, R. S. (2009)	To compare perceptions of vocal hygiene at different levels of music teaching experience	(N = 659) Experienced and preservice teachers	22 Universities	1 Session	Survey design
Hackworth, R. S. (2010)	To determine the relationship among music teachers' length of teaching experience, specialty, and ratings of behaviors and teaching activities related to vocal health	(N = 379) Preservice and experienced music teachers	Not Specified	1 Session	Survey design

Kinney, D. W. & Martin, M. (2008)	To determine undergraduate music education majors' opinions and reported learning outcomes related to recital attendance required by their degree program	(N = 294) Undergraduate music education majors	2 Midwestern universities	1 Session	Survey design
Spradling, R. L. (1985)	To determine the effect of duration and frequency of timeout (with instruction) from performance on attentiveness and attitude of students in a university band	(N = Not reported) Music and nonmusic majors of one southeastern university band	1 Southeastern university	8, 2-hour rehearsals	Experimental design

Chapter 4: **Discussion of the Findings and Implications**

Discussion of the Findings and Implications

Findings Within Themes

In the following pages, I will discuss the four main themes that emerged based upon my synthesis of Music Teacher Education (MTE) research: (a) individual focus, (b) musicianship skills, (c) preservice music teacher instruction, and (d) miscellaneous topics relating to MTE curricula. In order to facilitate discussion, I will present responses from a panel of three practicing music teacher educators who identified their preconceived ideas regarding MTE research before reading this synthesis and their reflections upon reading the complete synthesis. Finally, I will summarize the findings of studies found within each of the themes, provide dialogue from practicing music teacher educators on the state and future of MTE research, and discuss the importance of those findings to music teacher educators.

Individual focus. Researchers have examined the individuals' development of self as a musician, educator, and the individuals' perceptions of peers or faculty on their musician or teacher identity (as defined differently by various researchers who employed various frameworks and lenses). The studies in this section examined individual beliefs relating to teaching, the process of identity development, the impact of socialization, and the career mindset of preservice music teachers. Researchers who explored the development of undergraduate music majors' beliefs found that preservice music educators did not present a clear belief system as it relates to being an educator, while the beliefs that they have center around past music experiences. As a result, future music educators relied on past music experiences to guide their teaching. They have a tendency

to "teach as they were taught" (Austin & Reinhardt, 1999). Success during these experiences was perceived as the achievement of personal goals and the mastery of challenging tasks. Generally, the authors suggested that undergraduate music majors may increase their amount of effort and focus in accomplishing a task if music teacher educators identified, discussed, and then reinforced the undergraduates' successes.

The processes of pre-college and college socialization influenced identity development among preservice music teachers. The studies I found in this synthesis suggest that family members, high school faculty, college professors, and peers contributed to the development of the identity of undergraduates. The experiences and interactions with college faculty, peers, and nonmusic majors during the college experience strengthened the development of occupational identities more so than socialization during pre-college experiences. However, socialization experiences during MTE programs aided more in the development of a music performer identity rather than a music educator identity.

Family members, high school teachers, mentor teachers, and participation in pre-college teaching experiences influenced preservice teachers' decision to pursue a music education career. Preservice teachers identified that enjoyment in music, a belief in their own abilities, a desire to teach others, and a perception of seeing themselves as being useful in teaching music to others as primary reasons for pursuing a career in music education. Future music educators demonstrated a pattern of choosing to pursue employment as teachers in locations in which they are comfortable both culturally and socioeconomically.

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Although grade point average emerged as a predictor for retention in teacher preparation programs, researchers also found that MTE undergraduates reported a lack of support from college faculty, a lack of cohesion among the various aspects of their curriculum, and sensed discontinuity between their personal goals and those of the institution. These shortcomings, coupled with the transition into college, may create hardships and stress on undergraduates. The apparent lack of support and program cohesion seems to continue as preservice teachers progress through music teacher education programs. Preservice teachers enrolled in field experiences reported concerns regarding their teaching ability. Some preservice music teachers may feel under prepared to deal with the impact of their future job on personal outcomes. Researchers reported that undergraduate students may struggle with time management, the lack of a sense of being a professional, and difficulties balancing personal and work lives.

Musicianship skills and error detection. In the following section, I will summarize studies in which researchers examined undergraduate practice routines, perceptions of practice, practice strategies, the development of performance skills, error detection, aural skills, diction, evaluation of performances and the development of undergraduates' conducting skills. Practicing habits, and approaches to practicing, emerged as the foci of several studies. Undergraduates approached practicing as an annoyance, but accepted practicing as necessary to develop their musician skills. They often used terminology such as frustration, anger, or joy to describe their practice sessions. The student musicians found motivation to practice from internal factors, such as the challenge of mastering the technical demands of a piece. However, the focus on mastering technical skills did not contribute to their development of expressive playing.

Additional researchers interested in exploring undergraduates' practicing investigated the application or analysis of their practice strategies. Generally, the researchers found that undergraduates' success rate improved when private studio teachers identified specific practice strategies, provided feedback, provided appropriate aural models, and encouraged practice strategies by identifying how to approach challenges within a composition.

The researchers who examined the development of conducting skills found that traditional on-the-podium conducting approach to instruction and utilizing appropriate modeling benefited undergraduates the most. Moreover, when instructors combined real-life conducting situations and modeling undergraduates' conducting confidence in a teaching situation improved.

The development of the error detection skill is important for all musicians. Researchers found high academic success, music ability, and prior music experiences predicted for success in aural skill development. Undergraduates appeared to perceive pitches inaccurately often performing above or below a provided pitch. This pitch perception discrepancy was apparent when undergraduates had a better accuracy rate of identifying out-of-tune singers more frequently than in-tune singers. Investigations into instructional strategies revealed music students provided with appropriate aural models identified smaller units within a melody fostered improved accuracy in dictations. Those researchers who explored the use of technology for musical skill instruction reported mixed results. Although researchers noted improvement in student scores, the undergraduates found the programs cumbersome, time consuming outside of class, and often encountered technical difficulties.

In the previous chapter, I summarized findings related to performance evaluations (summarized in Table 3.2). Researchers found that prior instrument knowledge did not hinder an undergraduate's ability to provide descriptive analysis of performances or suggest ideas for improvement. While some researchers revealed that an evaluator's experience level or instrument preference did not influence evaluations, other researchers concluded that years of experience did contribute to evaluation accuracy. Peer evaluations emerged as being consistent in and across various studios; however, no strong correlations to faulty evaluations existed. Once again, modeling emerged as a promising tool for music teacher educators. Undergraduates with access to musical scores and appropriate aural models demonstrated higher accuracy in their evaluations of performances.

Preservice music teacher instruction. In the studies that I categorized into the theme of preservice music teacher instruction, researchers investigated:

- the learning process of preservice teachers

- methods courses

- the role and perception of technique courses

- the use of technology, perceptions of diversity

- thoughts on lesson planning, the effect and identification of teaching strategies/effectiveness

- field experience/student teaching

- the evaluation of others teaching and the self-evaluation of their own teaching.

Future music teachers approached learning how-to teach as they did learning how-to develop as a musician. They viewed teaching as a complex and rigorous process and

lacked a clear connection between various components of a MTE program. Undergraduate music majors preferred the opportunity to practice their teaching, reflect on their teaching, and receive feedback. A reflective approach to the instruction of undergraduates permitted preservice teachers to not only evaluate their teaching, but aided in the preparation and organization of their lessons.

Preservice music teachers improved phonetics and aural concepts and re-evaluated their personal teaching goals when they employed instructional technology via an ePortfolio. Moreover, the use of instructional technology provided younger PK-12 students with access to music education who may not otherwise have had the experience. The use of technology presented some shortcomings, however. The preservice teachers reported frustrations with the pacing of some of the software and encountered technical difficulties.

There is a growing need for music educators to better understand how to effectively and comfortably work with students with special needs. Researchers found that immersion experiences for preservice music teachers increased an awareness of comfort level for preservice teachers with individuals from diverse populations and special learner students. Undergraduates also demonstrated an ability to articulate how children with disabilities learn.

Preservice music educators identified creativity and a high level of musicianship as requisite skills for teaching. Modeling skills emerged as a strong contributor to variance in instructional effectiveness; the better one modeled for students, the more effective they seemed. Those who evaluated "teacher talk" found undergraduates tended to speak too much, especially when providing instructions, while the presentation of

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musical information occurred at a very low rate. Rehearsals that began with musical information received higher ratings for effectiveness than those rehearsals that began with directions. Novice teachers dedicated more time to tuning and modeling than experienced teachers. Although preservice teachers delivered the most "teacher talk", they demonstrated an ability to organize rehearsal time evenly between warm-up and musical selections.

Future music teachers' perceptions on teaching related to where they were in the sequence of the curriculum. Some tended to focus on skill sets, while others identified experiences outside the MTE curriculum as being important for teaching success. Undergraduates believed that learning to create lesson plans did not prepare them for teaching those lessons. Future music teachers reported they would have preferred additional courses in working with students with special needs, classroom management, and piano skills before teaching.

Reflections by preservice teachers during student teaching revealed they viewed themselves as facilitators of learning, encouraged diverse responses to music from their students, engaged their students in questioning, and employed cooperative learning and small group activities. Student teachers identified talking with students and selecting music as positive experiences while they viewed poor student music making activities as negative experiences. Further student teacher reflections demonstrated that they felt lesson plan submission was not necessary, a high GPA was necessary, and the cooperating teacher should complete the evaluation of the student teacher. Responses by preservice teachers and their cooperating teachers revealed that in order for there to be a successful transition to the teaching profession, expectations must be fulfilled from both

parties, student teachers must demonstrate the capable application of content knowledge, student teachers must demonstrate professional actions, and student teachers should be treated as professional peers.

Partnerships between community organizations and music teacher education programs provided an additional outlet for preservice teachers to develop teaching skills. The partnership allowed preservice teachers to realize what they thought would be easy was not. They developed an awareness of the importance of understanding another culture, and appreciated the opportunity for real life teaching experiences. The undergraduates reported a feeling of anxious anticipation, but also some degree of confidence, due to the opportunity they received to peer teach their lessons before the service learning instruction. The preservice teachers displayed an aptitude for applying strategies, skills, and techniques presented to them during the accompanying coursework with the community partnership.

Examination of undergraduates' evaluations of others' teaching revealed experienced teachers were more critical in their evaluations of teachers, and responded with judgmental comments more than preservice teachers. The undergraduates preferred teaching episodes with good teacher-delivery skills. Evaluation responses made by upperclassmen to a teaching situation were factual in nature and displayed higher-order thinking skills compared to preservice teachers in the early part of an MTE curriculum.

Considering the limited number of studies relating to the self-evaluation of teaching, the identified studies' findings demonstrated that preservice music teachers are capable of identifying and effectively evaluating varying degrees of teacher effectiveness. In addition, when preservice music teachers received instruction on observation

techniques, discussed the observations, practiced the techniques, and received feedback, the undergraduates demonstrated beneficial changes to their teaching. Undergraduates gained teacher confidence, planning efficacy, and reflection skills.

Miscellaneous research relating to MTE. I found seven studies that defied categorization, but still explored MTE. In these studies, researchers examined ensemble rehearsals, jury evaluations/performances, perspectives of teaching private lessons, mandatory recital attendance, and vocal hygiene. Based upon their results, the authors suggested that college musicians demonstrated a higher degree of off-task behavior during instruction when compared to performance, a rubric for juries demonstrated high interjudge reliability, undergraduates enjoyed attending recitals but did not value it as a requirement, and vocal stress appeared as a concern for both instrumental and vocal music education majors.

Practicing Music Teacher Educator Responses

In order to gain perspective as to how current music teacher educators value and utilize MTE, as well as obtain outside opinions of the content of the current synthesis, I asked three practicing music teacher educators to respond to two separate researcher-created questionnaires. The design of each questionnaire allowed for the gathering of specific data for discussion. The first questionnaire (Appendix B) gained information on (a) their application of research in the classroom, (b) their identification of the significance of MTE research, (c) their perceptions of similarities or differences between MTE and general teacher education research, and (d) the topics they deemed critical components in music teacher education. I designed the second questionnaire (Appendix D) to elicit information about the content found in the current synthesis. As a focus group

of three current music teacher educators by no means represents the music teaching educator profession, the purpose of the three-member focus group was to inform the discussion of how music teacher educators with various experiences view the role, purpose, and goal of research in MTE, not to generalize or use as the basis of any ultimate finding.

Questionnaire 1 responses (Appendix C). Three current music teacher educators reported their perceptions of the significance of MTE research as it pertains to policy development and moving the profession forward. Their responses identified personal educational contexts, curriculum planning or reform, and as a forum for discussion and debate. The current music teacher educators recognized the importance in the role of research in advancing the profession, however they did not clearly articulate how research can improve music teacher education development.

The three current music teacher educators identified common themes of advocacy and the uniqueness of the MTE programs as differences between MTE and general teacher education research. Music education majors often participate in courses in the college of music and the college of education, causing a sense of isolation by both students and college faculty. Music majors must be able to advocate for their programs adding an extra layer of burden and philosophy development for music preservice teachers.

Based upon the current music teacher educators' responses, I determined that they did not believe that research informed practice in the MTE field. As MTE is a relatively new field of research, people tend to teach as they were taught. The current music teacher educators suggested that for MTE research to better inform skill development and MTE

programs, research needs to be synthesized and reflect current political issues and social climates. MTE research should serve as a link between the preservice and inservice relationship and currently lacks a sense of connection from practice to application.

It is interesting to note that the current music teacher educators shared common thoughts about the need for researchers to focus on individual preservice teacher development. The current music teacher educators suggested further investigations into the development of teacher identity and how music learning influences developing general intelligence. "One of the challenges now," current music teacher educators B wrote, " is to synthesize findings from MTE research and to distill essential findings, identify tensions, and present the MTE community with resolutions-and unanswered ambiguities." This is the goal of the current synthesis.

Questionnaire 2 Responses (Appendix E). The three current music teacher educators responded that the current synthesis appeared to be comprehensive. However, they believed some topics were missing from MTE research, including the role of research in undergraduate training, curriculum evaluations, philosophical studies, comparative studies, and preservice teacher assessments. These topics were not included in the current synthesis due to established parameters (i.e., undergraduate music education majors did not serve as participants in these studies). The current music teacher educators were not aware of the specific parameters for this study. Each expert responded that topics they considered to be critical were addressed in the review, although maybe not as prominently as they would have thought or liked. Each current music teacher educator believed one of the areas of research in this synthesis was more prominent (e.g.,

considered conducting gesture research, student teaching/field experiences, musicianship skills).

When responding to how the current review reflected the state of MTE research, two of the current music teacher educators believed that the data reflected the current state of research in MTE. However, the third current music teacher educators (B) felt he or she was not confident in their overall knowledge of MTE research directly, and responded that he or she was not aware of the parameters of the current study (i.e., journals and search criteria) and therefore, did not respond to this item.

Research Question Conclusions

The purpose of the current project was to synthesize peer-review research relating to MTE and to recount the findings and connections of existing research for current music teacher educators. Based on researcher-established inclusion criteria, I identified studies found in peer-review literature and dissertations relevant to the topic. In the subsequent pages, I will discuss what areas of MTE have been isolated based on the parameters I established for this project and how music teacher educators and future researchers may expand the MTE research knowledgebase.

To begin, the research questions that guided the current synthesis were:

1. What subject matter emerged from examination of MTE peer-review research?

   a. What themes emerged from the synthesis of the research?

   b. What are the findings that emerge from the synthesis of the research?

2. What declarations do current music teacher educators make regarding the state and impact of MTE research and where it should focus?

What themes emerged from the synthesis of the research? Four themes emerged from the research: (a) self-beliefs and identity, (b) musicianship skills, (c) preservice music teacher instruction, and (d) miscellaneous research relating to MTE. The themes do not necessarily reflect a direct relation, but do reflect the components of a MTE program. The research does reflect a sense of organization in that each theme was explored at different levels. For example, researchers explored the development of the individual, how they view the teaching profession, how others perceive them, how they view their own teaching, and how they view others teaching. What does appear to be missing is an examination of the connection and relationships between the four main themes. Future examination of how these three themes interact and connect may increase a preservice teacher's confidence, awareness, ability, and competence as a teacher and musician.

What relevant findings have researchers established concerning MTE? The findings are narrowly-focused and although the information provided by individual research is beneficial, it does not provide consistent generalizations for MTE research or instruction. Based on the body of evidence, it seems that preservice teachers are influenced during both primary and secondary socialization, they benefit from feedback, reflecting, and guidance from the faculty, and aim to identify curricular connections.

What declarations do current music teacher educators make regarding the state of MTE research and where it should focus? Three current music teacher educators believed that MTE research should guide the profession in the development or

modification of current curricula and guide future investigations into the needs and development of future music educators. These current music teacher educators agreed that there does not appear to be a single study or finding that encourages immediate change in their teaching, but MTE researchers should examine accreditation practices, teacher testing, national standards for teachers, or arts policy issues. According to current music teacher educator A, the current synthesis reflected the current state of research and further claimed that a gap exists between research and practice.

Limitations of the Current Review

Limitations of a single-reviewer conducting a synthesis of literature may affect findings due to researcher bias concerning the inclusion of studies. I randomly sampled and reviewed ten abstracts two weeks apart to ensure studies were included or excluded for similar reasons. The second review allowed for the establishment of intraobserver reliability (Fink, 2005). I asked three outside reviewers to assist with improving validity and objectivity throughout the process. I provided the three outside reviewers with the keyword search terms and asked them to conduct searches using electronic databases to identify ten studies each that met the inclusion criteria. A comparison of the outside reviewers' responses revealed agreement on search terms, initial number of search results, and study inclusion agreement.

The use of a focus group of current music teacher educators consisting of only three members is limiting. The purpose of the focus group was to provide a brief exploration into what practicing music teacher educators identify as significant in MTE research, to provide insights into the role of MTE research, to serve as a source of additional objectivity, and to provide fodder for future discussion. The statements I

provide from the three educators do not represent all music teacher educators nor are the statements intended to represent the profession.

Trends Identified in Music Teacher Education Research Topics

During the course of this synthesis, I identified four themes: Individual Focus, Musicianship Skills, Preservice Teacher Instruction, and Miscellaneous Studies Relating to MTE (seven studies categorized as miscellaneous involved investigations related to the MTE curriculum but that did not fall into one of the other themes). In the following paragraphs, I provide a summary of the research trends within the four main themes.

I included 215 studies in this synthesis in which researchers employed a variety of research methods since 1982 (Table 4.1). An examination of the data shows that a majority of the research studies on MTE (144) was published within the last decade. Although researchers continue to use quantitative designs, within the last decade the use of qualitative designs has increased.

Table 4.1

Research Studies by Design and Date

Design	Research Designs by Type and Date			Total
	1982-1989	1990-1999	2000-2010	
Experimental	21	20	47	88
Correlational	7	15	41	63
Survey	2	2	12	16
Grounded Theory	0	0	3	3
Ethnographic	0	4	34	38
Mixed Methods	0	0	7	7
Total	30	41	144	215

Individual focus. I identified 29 studies related to the individual focus (i.e.,

undergraduate music education majors). Seventeen of the 29 studies followed

quantitative research designs while 12 used qualitative designs. As seen in Table 4.2, the

focus of investigations appears to shift. Investigations from the 1980's examined MTE

program aspects in broad terms. For example, researchers investigated admission and

retention of undergraduates in MTE programs in addition to identifying characteristics

that appeared to contribute to the success of undergraduates in the program. During the

1990's, researchers shifted toward a focus on examining the profession by identifying

recruiting efforts and the perceptions of undergraduates concerning the music profession

and their teaching beliefs. Researchers in the beginning of the 21st century conducted

research on the development of the individual student such as identity, perceptions of

self, and social interactions. These investigations, which total almost twice the number of studies between 1980-1999, explore preservice music teachers' perceptions of professional abilities, their level of comfort when teaching, social interactions, and how those interactions as well as program components influenced the development of their independent identities. While self-beliefs and individual development yield the second lowest number of investigations in relation to the other themes, the researchers may want to continue to explore individual development of preservice teachers as this is a relatively new and unexplored area of research.

Table 4.2

Final Number of Studies Examined by Theme

	Research Designs by Theme				
Design	Individual Focus	Musicianship Skills	Preservice Teacher Instruction	Miscellaneous	Total
Experimental	4	32	51	1	88
Correlational	12	34	16	1	63
Survey	6	3	2	5	16
Grounded Theory	1	0	2	0	3
Ethnographic	5	2	31	0	38
Mixed Methods	1	2	4	0	7
Total	29	73	106	7	215

Musicianship skills and error detection. Research into the development of musicianship skills (see Table 4.2) was the second highest number of total investigations ($N = 73$). Researchers utilized a quantitative design of inquiry in 69 studies. These scholars examined the observation of or evaluated the accuracy of completing music-related tasks. Nevertheless, as I looked at the studies by decade, the focus of investigations began to explore musicianship skills from different perspectives. Investigations in the 1980's appeared to have largely contributed to the knowledgebase of undergraduates' error detection or execution of performance skills. However, as the MTE profession moved into the 1990's, researchers began to investigate "*how*" undergraduate musicians approached developing their musicianship skills. Researchers examined the benefits and identification of practice strategies, undergraduates' interaction with studio faculty, and the modeling practices of studio faculty. Researchers in MTE continued to investigate error detection and interactions into the next decade, but began to investigate the effects of feedback, one-on-one instruction techniques, approaches to practicing, self-evaluation, and the undergraduate as an individual musician, not just the ability to find mistakes or complete an accurate performance task. The shift in research focus may have been a result of following the trends of general education researchers' focus on how individuals develop and learn.

Preservice music teacher instruction. In the current synthesis, I found that the highest number of MTE investigations examine preservice teacher instruction ($N = 106$, refer to Table 4.2). The trend of investigation began with an expansive view of MTE by examining the relationships of student teachers and cooperating teachers, undergraduates' perceptions of what was occurring in the classroom (observation tasks), and perceptions

of music teacher effectiveness. Researchers in the 1990's, however, conducted investigations into the evaluation of the type of feedback in teaching, preservice teachers' use of feedback, recognition of feedback, development of teaching skills, and content knowledge. The more prolific area of study from any decade and topic occurred in the 2000's - preservice teacher instruction ($n = 75$). At that time, researchers branched in multiple directions exploring investigations into community-learning partnerships, the evaluation and assessment of personal teaching, the use of technology as an instructional or evaluation tool, the use of instructional time, and the influence that past or current music experiences had on fostering strong identities in future music educators.

Miscellaneous studies relating to MTE. The final topic of miscellaneous studies ($N = 7$, refer to Table 4.2) may appear small and less significant, however, I believe there is a strong case for areas that should be investigated in order to help understand the future music educator. Three of the studies related to vocal hygiene and identified additional areas in need of investigation, preservice teachers' health and perceptions of musician health. The additional studies highlighted two additional topics that may seem insignificant, but play a major role in the undergraduate curriculum, that of the jury process and mandatory concert recitals.

For each of the themes, I find it interesting that a majority of the research has been published in the past twelve years (Table 4.1). The amount of research for each theme conducted in the first decade of the 21st century doubled the number of studies from the 1980's and 1990's combined. This explosion of research may be due to the increased spotlight by federal and local agencies on establishing standards for teachers, accountability, a sense of advocacy, an increase in the number of available doctoral

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programs and students in those programs, or even the resulting increased number of junior faculty members concerned about tenure requirements. The formation of the Society for Music Teacher Education (SMTE) provided a focused objective in discovering what was known about and improving MTE research. The continuing dialogue on teacher accountability in general starting with the Carnegie Report in 1986, then America 2000 and Goals 2020 in the 90's, NCLB in 2001, and now Race to the Top in 2009 present a sense of needing to justify the teaching profession, but this seems to be amplified within the arts.

Implications and Discussion by Identified Themes

In the following section, I will present discussions of the research findings relating to the four main themes: (1) individual focus, (2) musicianship skills, (3) preservice music teacher instruction and (4) miscellaneous studies about MTE. For each theme, I provide a brief summary of the identified subthemes as well as implications for music teacher educators.

Individual focus. Based on the results of this synthesis, I found that preservice teachers' personal experiences and goals (whether personal, musical, or teaching oriented) prior to starting a music teacher education program were influential in the socialization process and continued to develop while in the program. The socialization process influenced the perceptions of undergraduates' success as teachers and students, their development of belief systems regarding teaching, and their sense of identity as a student, musician, and teacher. Identity research spans over 20 years, involved qualitative and quantitative methodologies, utilized longitudinal and single studies, and demonstrated a wide variety of sample sizes. Researchers found that the primary

socialization process contributed to the choice to pursue a music education career (McClellan, 2007; Sichivitsa, 2003) though socialization during the college years appears to influence identity development more so than earlier socialization (Isbell, 2006, 2008). Unique to music education majors is the forming of relationships with general education faculty, music education faculty, studio professors, and ensemble conductors, while peers in nonmusic subjects form relationships with their faculty and peers. Identifying and understanding the socialization process can aid higher education faculty in developing and supporting undergraduate identities— musician and teacher—as well as their confidence as future teachers.

Scholars found evidence that the perceptions of identity and teaching efficacy changed over time and were impacted by the feedback of peers and college professors (Campbell, 1999; Schmidt, Zdzinski, & Ballard, 2006; Isbell, 2006, 2008). Knowing that preservice teachers' perceptions change over time, music teacher educators can reinforce positive experiences and provide meaningful feedback for developing strong social, pedagogical, and musicianship skills. Readers must be aware that no studies reviewed for the present manuscript directly examined the interactions of faculty and undergraduates, but rather assessed the relationships by collecting data using surveys or small sample sizes. Future detailed investigations into the relationship parameters during an undergraduate program may aid individuals responsible for teaching future educators in understanding the nature and importance of the interactions between faculty and undergraduates.

Teaching experiences. Researchers further revealed preservice music teachers' teaching experiences directly related to the development of teacher identity.

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Investigations into future music teachers' participation in authentic context learning situations (Paul, Teachout, Sullivan, Kelly, Bauer, & Raiber, 2001) and immersion projects (Hourigan, 2007) or university-community based partnerships (Conkling, 2003; Standley, 2000) revealed that preservice teachers who participated in such activities not only realized early how teaching is not as easy as they thought it would be, but demonstrated improved skill and confidence as teachers. Researchers have found that undergraduates invested in a course if they believed they would gain new knowledge (Russell, 2007). Although the number of investigations into the area of authentic teaching experiences is small and relatively recent, findings generally supported the benefits of real-world experiences when learning how to teach. These experiences allowed immediate practical application of class discussions, interactions with students, and the opportunity to practice teaching skills. Instruction by music teacher educators should include as many authentic experiences as possible to help future teachers develop their teaching skills. Researchers discovered that most teachers aim to stay in a community similar to one in which they grew up preservice teachers may benefit from participating in localized teacher education programs that address the needs of an established community.

Perceptions of success. Researchers have found that undergraduate music teachers' beliefs and perceptions of teaching success and music performance related to the accomplishment of personal and professional goals (Asmus, 1986; Legette, 2002). Researchers identified GPA as a means of predicting a student's success or retention in the program (Brown & Alley, 1983), while undefined goals, a lack of coordination between personal and institutional goals (Schmidt, Zdzinski, & Ballard, 2006), and a lack

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of program cohesion emerges as reasons for withdrawing or expressing concerns about the MTE program (Hamann & Daugherty, 1985). When trying to identify prospective music education majors, institutions of higher education need to consider the goals of the applicant, discuss how the curriculum can meet those goals, and explore how the faculty-student relationships between the various schools and program components may benefit the preservice music teacher.

Musicianship skills. In nearly a quarter of the studies, researchers examined the development of musicianship skills. Many of these researchers focused on specific competences such as aural skill development, conducting, and pitch identification that could apply to all undergraduate music majors (Current Music Teacher Educator B). Developing musicianship skills is important for future teachers. Therefore, such studies certainly relate to preservice music teachers as well. Specifically, a number of scholars (Carter, 2010; Lane, 2006; Miksza, 2006; Price, 1983; Roebke, 2005; Woody, 1999, 2003) showed that the use of an aural model or the modeling of practice skills and strategies by faculty benefited the development of future music educators. Although students identified practicing as necessary, though not enjoyable (Diaz, 2010; Kostka, 2002), the rewards are the accomplishment of mastering a skill, not necessarily performing musically (Rosenthal, Durairaj, & Morgan, 2009). To help undergraduate music majors master practicing, studio instructors should provide strategies for practicing and discuss the process of how to practice with their students. When these measures are taken, the performance ability of the students improves greatly (Miksza, 2006; Carter, 2010).

Use of model. Music faculty facilitated the success of undergraduate musicians by providing appropriate models and by providing feedback and encouragement on areas of weakness within undergraduates' musicianship skills. Considering the large amount of research that exists in musicianship skills in music teacher education, it is possible that MTE researchers have presented a narrow range of research that does not explore the development of creativity, a concern expressed by Current Music Teacher Educator B (See Appendix E). If preservice music teachers are to transfer their musicianship skills to teaching situations, researchers need to assess not just knowledge and knowledge transfer, but also the application of musicianship skills in PK-12 music classrooms.

Preservice music teacher instruction. Preservice music teachers viewed learning how to teach as a rigorous process and compared it to the process of learning to perform musically (Conkling, 2003). Undergraduate music education majors favored receiving instruction in their preferred learning modality and reported a preference for a reflective model of instruction rather than traditional lecture and test format of instruction. The reflective model allowed preservice teachers the opportunity to reflect on personal experiences or situations, which helped in planning for future teaching experiences (Hourigan, 2008; Killian & Dye, 2009; Korenman & Peyncoglu, 2007). As preservice music teachers progressed through the MTE program, they demonstrated the development of higher-order thinking skills when compared to prospective freshmen. They did not, however, identify a single source of their pedagogical knowledge (Haston & Leon-Guerrero, 2008; Sheldon & DeNardo, 2005). Current Music Teacher Educator A explained that those responsible for teaching future music educators need to possess an understanding of what the role of music learning is on developing intelligence (See

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Appendix C). This understanding may allow for increased individual growth and confidence in future educators. To help in the process, music teacher educators can implement the reflective model of instruction on broad scale (i.e., in more courses found earlier in the degree program and in general education courses) to allow undergraduates the time to make the personal corrections and connections of their teaching abilities. For example, those undergraduates who participated in reflective and authentic context learning activities earned higher scores on teacher effectiveness than individuals who did not participate in such activities (Paul et al., 2001). Paul and colleagues, however, only examined the evaluation of teacher effectiveness. Preservice teachers reported that the undergraduates, realizing they were the only source of music instruction during a university-community partnership, still expressed concerns regarding the effectiveness of their teaching following authentic context learning experiences (Reynolds, Jerome, Preston, & Haynes, 2005).

   Learning process. According to researchers exploring the lesson planning process of preservice music teachers, it appears they are successful in finding and implementing appropriate lesson materials (Huang, 2002), can develop and articulate goals within the framework of objectives (Schleuter, 1991), and display teaching strategies similar to those of experienced teachers (Brittin, 2005). However, a year-long qualitative study of ten undergraduate music education students in a string lesson program revealed that the students viewed lesson planning as unnecessary and the students displayed differences between themselves regarding apparent desires or abilities to think about teaching in advance (Schmidt, 2005). Overall, these researchers seem to be suggesting that undergraduates view the process of teaching as reactive and not proactive.

Field experiences/student teaching. Researchers investigating relationships

between field experiences and student teaching revealed that despite confidence in the

coursework preparing them for actual teaching, many preservice teachers still felt anxious

and uncomfortable about teaching, in part, due to the fact that they believed lesson

planning did not prepare them for instruction (Abrahams, 2009). Preservice teachers

revealed that they would prefer additional instruction in classroom management, piano

skills, and how to work with students with special needs (McDowell, 2007).

Teaching skills. Preservice teachers displayed the skills necessary to prepare for

teaching, but lacked confidence in their abilities, suggesting that music teacher educators

must identify and address how preservice teachers think about developing their teaching

skills. Are preservice teachers approaching their development one course at a time or do

they see the connection between theory and application? Answers to this question may be

gleaned from the results of investigations exploring the development of teaching

strategies and effectiveness of preservice teachers. Preservice teachers' perceptions on

teaching effectiveness related to their position in the curriculum sequence.

Undergraduates in early stages of coursework demonstrated a focus on developing skill

sets while undergraduates in later stages reveal the importance of experiences outside of

the MTE curriculum (Hourigan & Scheib, 2009).

Peer teaching. Researchers found several benefits of peer instruction for

preservice teachers. Undergraduates who received instruction and the opportunity to

peer-rehearse classroom management techniques display substantial gains in self-efficacy

(Bergee, 2002). Furthermore, preservice teachers identified peer-teaching experiences as

being beneficial for reflecting, understanding, and implementing lesson sequencing

critical to their preparation for student teaching (Schmidt, 2010). The opportunity to rehearse a lesson with peers before teaching in a service-learning situation aided the undergraduates in limiting their sense of anxious anticipation. Preservice teachers in the same investigation displayed the ability to incorporate strategies, skills, and techniques presented as part of the accompanying course (Siebenaler, 2005). Music teacher educators may consider incorporating peer-teaching experiences in their courses, particularly courses offered later in the undergraduate curriculum. These experiences would allow the connection of theory and practice in a friendly environment for the preservice teachers.

Evaluation of others' teaching. Researchers have begun to establish a clear differentiation between music teaching experience and undergraduates' year in school as scores for teaching evaluations using factual versus inferential content rose as the level of experience increased (Standley & Madsen, 1991; Madsen & Cassidy, 2005). However, no significant differences or interactions emerged between undergraduate and graduate students or by concentration (instrumental or vocal) in evaluating the use of instructional time, student attentiveness, or overall teaching effectiveness (Madsen & Cassidy, 2005). Taken together, the reader may interpret these findings to say that evaluating others' teaching may be most malleable during initial MTE experiences for undergraduates rather than graduate students or inservice teachers.

Other researchers have also found that minimal differences exist between how undergraduate and graduate students evaluate others' teaching - each preferred teaching episodes with good teacher-delivery skills and found them to be more interesting than those lessons with poor teacher delivery regardless of the lesson content quality

(Hamann, Baker, McCallister, & Bauer, 2000). The importance of the undergraduate experience in learning to evaluate others' teaching is echoed in research that compared the observational skills of prospective music education majors with junior music education students on music instruction. The scholars found that the responses of the upperclassmen were factual in nature, not inferential, and displayed higher-order thinking skills (Sheldon & DeNardo, 2004). Sheldon and DeNardo concluded that as individuals gained experience, the accuracy in their written comments increased, however the ability to identify teaching characteristics such as effectiveness and task management did not relate to experience level.

Some researchers have found differences in how undergraduates and experienced teachers use instructional time. While experienced teachers appeared to dedicate more time and comments to overall ensemble sound, accuracy of instruction, and sequential patterns of instruction, preservice music teachers spent a great amount of time in "teacher talk" but spent more time modeling than experienced teachers. It appeared that preservice teachers could organize a rehearsal (Goolsby, 1996,1997; Henniger, Flowers, & Connor, 2006; Madsen, 2003; Yarbrough, Price, & Hendel, 1994). Other researchers, however, found that undergraduates spent a great deal of time talking and a minimal amount of time modeling (Dorfman, 2010). The researchers discovered that undergraduates who received training in strategies to (a) reduce nonessential verbal instruction, (b) teaching self-assessment, (c) identify teacher intensity, and (d) incorporate class reflection time were able to modify their lessons, teaching strategies, and reduce verbalizations (Cassidy, 1993, Madsen, Byo, & Cassidy, 1989; Madsen, Standley, Byo, & Cassidy, 1992; Rosenthal, 1985). The scholars, on the whole, suggested that future music educators'

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possessed the skills and knowledge for teaching, but could improve in their range of teaching skills. For example, preservice music teachers demonstrated organization and modeling skills, but the research does not explore how undergraduates processed information, made decisions for an ensemble during a rehearsal, or approached implementing long term planning.

Feedback. Music majors identified a larger number of instances of teacher approval than nonmusic majors, however, the two groups showed similarities in their ability to identify teaching styles (Prickett & Duke, 1992; Wolfe & Jellison, 1990). Results concerning preservice teachers' evaluations of feedback revealed that many types of feedback could be highly effective (Madsen & Duke, 1985a, 1985b). However, the instructors' comments used to make corrections did not necessarily affect student achievement or attitude, verbal interactions appeared to be no more important than the visual affect an individual brings to teaching, and the positive to negative comment ratio was generally reflective of an evaluation score for teaching effectiveness (Duke & Henniger, 2002; Johnson, Darrow, & Eason, 2008). Instructing preservice music teachers in the effect use of feedback can provide an additional skill set.

Research relating to MTE programs (ensembles, juries, lessons, etc.). Research in this section involved a collection of information not directly related to MTE, however, these components of a program are required for undergraduates pursuing a degree in music education. The *Multidimensional Assessment Rubric* (Ciorba & Smith, 2009) demonstrated high interjudge reliability and could be beneficial as a rubric for juries. Undergraduate music majors valued attending mandatory recitals but rejected the idea that a good performer is always a good teacher and view teaching private lessons as

a means to improve their skills as both a teacher and a performer. Undergraduates expressed concerns regarding the impact of teaching on their vocal health and considered aspects of teaching as high-risks.

Recommendations for Future Research

Although I focused on research published in peer-review journals and recent dissertations where preservice music teachers served as participants in the current synthesis, a wealth of research remains that needs to be examined. As MTE research continues to evolve, the findings of this synthesis clearly identify areas of music teacher education that lead to future research topics, future MTE research syntheses, and recommendations for music teacher educators.

Methodological Suggestions for Future Research Syntheses

Modern tools such as the Internet and electronic databases have made MTE research readily available to researchers and practitioners, though electronic-only access does present vicissitudes. For example, the current synthesis revealed that validity checks undertaken by outside reviewers were consistent through the ERIC database (see Table 2.3). However, other databases (e.g., Academic Premiere) existed in different levels, such as the "Academic Search Complete" and "Premiere" versions. Institutions may subscribe to the different levels of electronic databases limiting which journals are available and, in turn, limiting the accuracy of responses of searching journals electronically. Therefore, future researchers should follow the methodology presented in this review requiring an additional hand search of journals to aid in locating studies for investigation. The databases are constantly updating the available information making accurate tracking and cataloging of studies a possibility for the researcher.

The current synthesis limited the examined research to peer-review journals. Future researchers wishing to do the same task need to consider the purpose of the journal to ensure the journal meets the research requirements as well as the inclusion of non-peer reviewed journals such as open access journals. Although open access journals may be gaining gravitas among researchers, the non-peered nature of many of them would require those who wish to undertake a similar synthesis to add a methodological review to their analysis. Journals can be marketed toward the practitioner, scholar, or researcher. Depending on the goal of the researcher and the investigation design, justifying the journal selection can streamline and focus the search process. An issue that emerged from this review was that there was a dearth of information found in traditional education journals such as *Harvard Education Review*, *Sociology of Education*, and *Journal of Higher Education* that related to music teacher preparation. Higher education faculty members consider these education journals to be the leading journals of education based on the journal impact factors, though no articles related directly to MTE.

Suggested Topics for Future MTE Research

Music teacher education research is relatively new. It would be beneficial to synthesize what is known about the various areas of MTE while it is still a manageable task. By design, in the current synthesis, I examined the narrow scope of peer-review MTE research, however, a larger body of research remains (e.g., other journals, conference proceedings, position papers, professional organization documents, etc.) that warrants further synthesis. The findings of the current study revealed additional areas for investigation including, but not limited to:

- Undergraduates' learning processes and development

- Identity development, particularly the musician/teacher identity

- Philosophical research

- Authentic context learning and immersion activities

- Course sequence evaluations

- Curriculum development and evaluation

- Perceptions of the curriculum by undergraduates

- Cohesion of curricula between a College of Education and School of Music

- Comparative studies of music programs both foreign and domestic

- Comparative studies of types of degree offerings

- Comparative studies of types of institutions of higher education

- Evaluation and assessment of preservice teachers as they progress through a program

- How higher education faculty incorporate research into undergraduate instruction

- Self-evaluation of teaching

- Optimal time to begin teaching experiences

- Collaboration and interaction of music education, general education, and studio professors

Summary

The purpose of the current synthesis was to synthesize peer-review research relating to MTE and to recount the findings and connections of existing research for current music teacher educators. I did not design the current synthesis to evaluate the

instruction or content that preservice music teacher receive. The intent was to identify research topics, provide an overview of the literature so music teacher educators can have informed discussion, and to report what is known regarding MTE.

Based on the findings presented in this synthesis, further research is needed that will help music teacher educators create and implement effective music teacher training curricula and, ultimately, provide future music teachers with effective skills, coursework, support, and teacher confidence. I suggest that future studies should be conducted in which we focus on the connections of different MTE programs as well as connections between MTE and general education training and research. I posit that we have only begun to be explore MTE research given the many and varied apparatuses within our professional field. Researchers interested in MTE as well as music teacher educators should continue to identify and investigate areas of needed research and implement undergraduate teacher training programs based on peer-reviewed, empirical evidence rather than dogmatic traditions.

Appendix A: Secondary Screening Form

Study ID: _____   Date of Screening: _____   Reviewer Initials: ____

Full Citation:

1. Database:

           ERIC _____   MESS _____   Academic Search Primer _____

Keywords Used: _____

Published: JRME   CRME   JMTE   Update

Year Published: _____

2. Does this study address undergraduate MTE?

Yes ____   Unsure _____   No (STOP/Exclude) _____

3. Does this Study take place in a undergraduate setting?

Yes ____   Unsure _____   No (STOP/Exclude) _____

4. Is this an experimental study design?

Yes ____   Unsure _____   No (STOP/Exclude) _____

5. Study Subjects are undergraduate in MTE

Yes ____   Unsure _____   No (STOP/Exclude) _____

Decision: Exclude ____   Include/progress to Decisive Screening ____

Appendix B: Expert Questionnaire Part I

Name:
Years Teaching:
Academic Rank: **Years at Rank:**
Type of Institution:

Music Education Majors:
Music Performance Majors:
Composition Majors:
Musicology Majors:
Other Music Majors:

Accepted Letter of Consent:

Completed Questionnaire on:

1. What is the role of music teacher education (MTE) research in informing your practice? Please provide your goals for MTE research and how you utilize research in your teaching.

2. How would you characterize the significance of MTE research for music teacher educators?

3. What similarities and/or differences do you find between MTE research and general teacher education research? What do you feel might be the reasons for any differences?

4. Do you feel that research informs practice in the MTE field? If so, to what extent? If not, why?

5. What topics do you consider critical for research in MTE?

Appendix C: Expert Responses to Questionnaire 1

Name: A
Years Teaching: 30 years
Academic Rank: professor **Years at Rank:** 7 years
Type of Institution: Masters College or University

Music Education Majors: 200
Music Performance Majors: 200
Composition Majors: 26
Musicology Majors: 0
Other Music Majors: Combined degree of music education and performance: 200

Accepted Letter of Consent Yes 12/23/2011

Completed Questionnaire on: 11/23/2011 16:11:11

1. What is the role of music teacher education (MTE) research in informing your practice? Please provide your goals for MTE research and how you utilize research in your teaching.

Over my 30 years of post doctoral teaching, the role of MTE has shrunk. Where I used to react (over-react?) to findings, single studies now rarely change my approach. However, when accumulating evidence becomes apparent, my approach evolves. Topics are often added especially regarding social and political changes. This is more a decision based on my current course load than awareness or lack thereof.

2. How would you characterize the significance of MTE research for music teacher educators?

It is the best way to move the profession forward. If we call ourselves professionals we must look for ways to improve our approaches.

3. What similarities and/or differences do you find between MTE research and general teacher education research? What do you feel might be the reasons for any differences?

Music people are having to spend time advocating for their very existence in the schools. General teacher ed research not so much.

4. Do you feel that research informs practice in the MTE field? If so, to what extent? If not, why?

Probably not, in general. People still tend to teach as they are taught; and how their gut tells them what is right.

5. What topics do you consider critical for research in MTE?

The role of music learning as part of developing general intelligence. Advocacy is the reason why.

Unbiased research regarding music learning theory. Reason why is we just need to know how we learn music to better teach it.

Name: B
Years Teaching: 21
Academic Rank: professor **Years at Rank:** 7
Type of Institution: Doctoral Granting University

Music Education Majors: 90 plus
Music Performance Majors: ?
Composition Majors: ?
Musicology Majors: ?
Other Music Majors: Other than my own department, I don't know the numbers of
students in other departments.

Accepted Letter of Consent Yes 12/27/2011

Completed Questionnaire on: 5/27/2011 12:05:03

**1. What is the role of music teacher education (MTE) research in informing your
practice? Please provide your goals for MTE research and how you utilize research
in your teaching.**

The following areas of research in music teacher education have influenced my
philosophy and practice
a. introducing field experiences early on in the teacher education program.
b. immersing methods class students in field experiences to accompany and give
relevance to the topics that are addressed in class.
c. using practical ways of helping students develop a teacher identity (e.g. exploring their
musical biography) and a personalized philosophy of music education (e.g. scenarios
from the field or case studies)
d. having students develop skills of reflective practice (e.g. write self- evaluations of their
teaching or watch a video of their teaching and observe and write about it)

At the graduate level, when I teach an introduction to research course, I place emphasis
on the teacher as researcher and the importance of incorporating inquiry into one's
everyday teaching practices.

**2. How would you characterize the significance of MTE research for music teacher
educators?**

I believe it's important. Research findings provide a foundation for curriculum planning
and reform, they position music teacher education alongside other subject areas and
perhaps highlight the uniqueness of music teacher education. Research also provide a
forum for discussion and contribute to philosophical statements related to our mission
and programs. It can also contribute to political support for changes in curriculum in
higher education.

3. What similarities and/or differences do you find between MTE research and general teacher education research? What do you feel might be the reasons for any differences?

I feel under-qualified to answer this question since I've not taught in a college of education with colleagues in general education, nor am I knowledgeable about or informed by general teacher education research.
I suppose music teacher educators who research in MTE draw on research in general teacher education, so it comes indirectly to us.

In MTE, we deal with issues that are not of concern to many other teacher educators – teacher and performer identities, the culture of MTE is different from other areas since we operate for the most part in departments, schools or colleges of music. There are exceptions, of course such as the U of Wisconsin – Madison. Few of us collaborate with teacher educators in other curricular areas.

4. Do you feel that research informs practice in the MTE field? If so, to what extent? If not, why?

I'm not convinced that it does, at least to any significant degree.- yet. Research in the area of MTE is a relatively recent development. The regular SMTE conferences, I believe, have brought research and practice closer together. For example, when case studies of curricular reform are presented in such a forum, they likely influence thinking on a particular aspect of MTE and maybe cause participants to return to their institutions motivated to institute change.

One of the challenges from now on is to synthesize findings from MTE research and to distill essential findings, identify tensions, and present the MTE community with resolutions – and unanswered questions and ambiguities.

MTE is the link between changing trends in music and society and what happens in music classrooms in K-12 schools. And within that relationship, I believe that MTE research is a vital agent in reforming school music. In that context, MTE research has to be considered in both pre-service/pre-professional and in-service contexts.

5. What topics do you consider critical for research in MTE?

1.   Return to examining models of teacher education, traditional music education programs vs. primary degree plus teacher certification (the Holmes model). Why? Because it would be useful to compare various models to have confidence that the traditional undergraduate program is indeed the most efficacious model.
2.   Related to #1, we need studies that compare and contrast MTE programs in various national settings. In that way, we can begin to see the influences of licensure and certification, relationships between music in schools and in higher education, and the kinds of knowledge, skills and dispositions that are highlighted in various programs.

3.	Developing strategies for helping students to grow their teacher identities. What's appropriate for freshmen? Sophomores? Etc. There is a philosophical thread that is separate from and transcends any one course a student takes that needs to be developed over the course of a degree program. It unifies their thinking about teaching, develops passion about their mission as teachers, and gives them a sense of self as musician-teacher that is a foundation for their professional careers.

4.	Findings ways to identity and prepare practicing music teachers to be 'official' music teacher educators hired by colleges and universities.

Name: C
Years Teaching: 8
Academic Rank: Assistant Professor **Years at Rank:** 8
Type of Institution: Doctoral Granting University

Music Education Majors: 125
Music Performance Majors: 100
Composition Majors: 10
Musicology Majors: NA
Other Music Majors: Technology/Production-100

Accepted Letter of Consent Yes 1/3/2012

Completed Questionnaire on: 20/3/2012 9:20:30

1. What is the role of music teacher education (MTE) research in informing your practice? Please provide your goals for MTE research and how you utilize research in your teaching.

I regularly read published MTE research. As appropriate to my educational context, I implement policies or teaching strategies from research. If they are successful I continue to use them, or modify them to better fit my circumstances. I use published MTE research in my graduate music education classes for various purposes.

2. How would you characterize the significance of MTE research for music teacher educators?

I can only characterize the significance of MTE research for me, as I did in question 1.

3. What similarities and/or differences do you find between MTE research and general teacher education research? What do you feel might be the reasons for any differences?

It seems as though general teacher education researchers are able to collect data from larger groups, perhaps allowing for more generalization. MTE researchers often use case study designs or investigate small populations, limiting the generalizability of results. This might be because general teacher education researchers are better prepared to conduct research then MTE researchers.

4. Do you feel that research informs practice in the MTE field? If so, to what extent? If not, why?

It informs my practice, but I cannot say with any confidence if it informs practice throughout the MTE field.

5. What topics do you consider critical for research in MTE?

Undergraduate music teacher identity development encompasses all aspects of what it means to become a music teacher and can be researched in many useful and relevant ways. Graduate MTE researchers could focus on the development of university music teachers.

Appendix D: Expert Questionnaire Part II

Name:
Completed on:

1. After reading the enclosed review, did you find issues or concerns missing or any that were surprising?

2. Did you find the topics you consider critical in MTE addressed in the review? If so, to what degree?

3. Do you think the research reveals any topic/s that are "covered" more in depth than another? In other words, do you sense some research is considered more important than others?

4. How do you think the data presented in the current review reflects the state of research in MTE?

Appendix E: Expert Responses to Questionnaire 2

Name: A
Completed on: 49/27/2011 7:49:04

1. After reading the enclosed review, did you find issues or concerns missing or any that were surprising?

No. This appears to be a comprehensive synthesis of MTE research.

2. Did you find the topics you consider critical in MTE addressed in the review? If so, to what degree?

Yes - all topics I considered critical were addressed to the extent that the research has advanced to this point.

3. Do you think the research reveals any topic/s that are "covered" more in depth than another? In other words, do you sense some research is considered more important than others?

Conducting research seems to be covered more in depth than others. It is out of proportion compared to other areas.

4. How do you think the data presented in the current review reflects the state of research in MTE?

It does reflect the state of research accurately. What is apparent to me is that the gap between this research and practice is extremely wide. I would be hard-pressed to find any research cited that has "made a significant difference" or "made a positive contribution" to actual current music teaching in the general sense or even the more specific sense.

Name: B
Completed on: 22/11/2012 15:22:50

1. After reading the enclosed review, did you find issues or concerns missing or any that were surprising?

a.   I expected to find a greater scope of topics in the category "musicianship." The studies were quite focused on very specific skills, some of which could apply to all undergraduate music majors – for example, practicing. (although aural skills instruction does not appear in this section, it seemed that it should; that too would apply to all music majors.) The topics that were addressed necessary and valid, but they reflect a narrow view of musicianship. They do not focus on the creative musician, the musician who performs in other musical genres besides classical music. There seems to be a focus on skill with little attention to knowledge or dispositions.
b.   I was surprised with the lack of studies on music literature.
c.   Although the development of beliefs was addressed, it seems that we would benefit from more studies on the development of personal philosophies about music and music teaching.
d.   The debate as to whether formal music teacher education should begin right away, in the middle of a music degree or as a post-baccalaureate diploma or certification is not evident and I consider this topic of central importance.
e.   No studies were reported on the education course sequence that undergraduates typically are required to complete for certification.
f.   The same could be said for the kinds of general courses that students take. Rather than leaving 'general courses' as open electives within course categories, do programs have arts electives that are directly related to the preparation of teachers.
g.   Lack of comparative studies in music teacher education where programs in different countries are compared and insights presented.
h.   Issues of gender in music teacher education, either in the preservice teachers themselves or in the content of the music curriculum
i.   Preservice teachers' development of the notion of curriculum.
j.   How preservice teachers are tested along the way – what are the barriers, what is the nature of testing, what is the relationship between schools of education (typically the accrediting agencies but not always, as in the case of some conservatories who deal directly with the state) and schools of music, schools of music and the state etc.

2. Did you find the topics you consider critical in MTE addressed in the review? If so, to what degree?

In general I would say yes, but, the focus is on traditional topics. There doesn't seem to be anything that pushes the envelope of knowledge in relation to what students need to know, do and believe to go out and be successful in today's schools.
Many of the topics outlined in question 1 I would place in this question too.

3. Do you think the research reveals any topic/s that are "covered" more in depth than another? In other words, do you sense some research is considered more important than others?

Yes, there is a strong focus on traditional musicianship skills and development of identity and socialization processes. I would have expected more studies on methods courses. Practicing seems to receive undue attention. Field experience was well covered. A large number of studies on the evaluation of the teaching of others, when compared with self-evaluation.

4. How do you think the data presented in the current review reflects the state of research in MTE?

To be honest, I don't know this area of research very well so my comment is made in that context. (I don't know which journals were examined in the search.) I'm aware of some studies in comparative music teacher education, and I don't see them here. I'm surprised that studies in creative musicianship were not found. At the more global level, I thought the review would include some studies on accreditation practices and agencies, teacher testing, national standards for teachers, arts policy issues, and so on.

Name: C
Completed on: 59/4/2012 8:59:36

1. After reading the enclosed review, did you find issues or concerns missing or any that were surprising?

The only topic that I noticed missing was the role research plays in undergraduate training. I was not surprised by anything.

2. Did you find the topics you consider critical in MTE addressed in the review? If so, to what degree?

I consider identity development and pedagogical content knowledge the most critical topics in MTE and they were both addressed, though neither as prominently as I would like to see.

3. Do you think the research reveals any topic/s that are "covered" more in depth than another? In other words, do you sense some research is considered more important than others?

Student teaching/field experiences seem to occur the most, suggesting researchers believe they are more important than other topics. Perhaps this is so, as it is the culminating experience of years of study, and the awaited combination of identity development and pedagogical content knowledge.

4. How do you think the data presented in the current review reflects the state of research in MTE?

Seems thorough to me. I can't think of frequently researched topics appearing in journals that are not in the current review

Appendix F: Bulleted Summary Provided to Experts for Questionnaire II

Synthesis of Results

Overview

The purpose of this chapter is to synthesize the research on music teacher education (MTE) into manageable categories and to present an overview of each study's purpose and results. An examination of the MTE research yielded 681 studies that met the established initial search criteria. A secondary review of each study's abstract and purpose ensured a focus on MTE and qualified a final 283 studies for analysis. Similar to Duke (2000), I employed each study's purpose/s as a delimiter. As such, I classified the final studies into four emergent categories:

1. The Development of Self and Beliefs ($n = 24$): Studies examined individual beliefs, identity, socialization, and career mindset of preservice music teachers

2. Musicianship ($n = 47$): Studies examined private instruction/practice, time use during practice, goals, performance techniques, health issues, and performance evaluation of preservice music teachers

3. Teaching skills ($n = 113$): Studies examined the teaching of music, educational pedagogies, rehearsal skills, teaching methods courses, vocal/instrumental techniques courses, acquisition of content knowledge, field experience/student teaching, use of technology in instruction, and the evaluation of others or self-teaching episodes among preservice teachers

4. Research relating to MTE programs (ensembles, juries, lessons, etc.) ($n = 7$): Studies examined aspects relating to MTE such as ensemble performances, recital attendance, teaching private lessons, and health.

The following bullets provided summaries of the findings of the examined individual studies included in the current systematic review. The following pages present studies according to the three categories with subcategories and a brief summary presented at the conclusion of each category.

Individual

    Beliefs.

- Preservice music teachers and music therapy students identified success as a relation to effort while their own success attributed to the difficulty of the task.

- Effort and ability are rated equally by preservice music teachers suggesting their perception of success may be increased if music teacher educators reinforce the undergraduates' successful behaviors and guide them in areas of improvement.

- Consistent positive responses by music education majors regarding the validity of music in schools and the evaluation of accuracy in advocacy statements demonstrated a lack of clarity in an established hierarchy of beliefs. Therefore, music education majors maintain a sense of optimism for their profession and may rely on experiences from high school to inform their own practice.

Development of Musician/Teacher Identity and Socialization.

- Preservice music teacher educators identified their music teachers and immediate family members as being influential in choosing music education as a major. The preservice teachers were indifferent to negative

comments about their career choices and viewed music teaching as preserving its role of prestige in an occupational hierarchy.

- In addition to the role parents and family played into career choice, research has identified additional influences such as pre-college teaching experiences, interactions with nonmusic majors, college music faculty, and college ensemble directors.

- Music education majors tended to focus on developing their skills as performers more so than the development of educator skills. Undergraduates were more inclined to socialize with individuals that shared common interests or beliefs (musical or non-musical).

- Preservice teachers enrolled in field experiences reported higher concerns about teaching than did preservice teachers enrolled in introduction music education courses or student teaching. Females consistently reported higher concerns compared to their male counterparts while students who identified early childhood as a first choice for teaching demonstrated the highest level of concerns compared to other groups.

- Preservice music education students described the role of a teacher and themselves as a guide willing to take students on a musical journey or expedition, as someone who transmits knowledge, or as someone that continues to grow professionally and in maturity.

- The development of both teacher and musician occupational identities form based on relations to people encountered during both primary and secondary socialization. Primary socialization was support from family,

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school music teachers, and music experiences (performance or teaching based). These influences carry over during secondary socialization in the form of relations with nonmusic education majors, music education majors, music education faculty, and ensemble directors. Preservice music teachers do not encounter as many influences during primary socialization as they do during secondary socialization.

- Occupational identities develop based on occupational goals and the priority of personal skills, teaching skills, and musical and their exploration.

- MTE programs do not tend to aide in the development of a professional music education occupational identity, but rather MTE programs focused on performance. Undergraduates ranked professional performance as the top occupation with musician and music teacher tied for second. Preservice teachers with a band or choral concentration related more to the music educator occupational label than did those with a string concentration. Therefore, undergraduates in a MTE program cannot clearly define or explain music goals for themselves or explain what music education should accomplish.

- In a learning community of undergraduate and Ph.D. music education students, both groups benefited from the interactions. Undergraduates appreciated the real world and theory connection the Ph.D. students provided, while the Ph.D. students gained insight into undergraduate concerns and their thoughts on teaching music.

- Collaboration of preservice teachers in across disciplines, specifically art and music, provided a positive experience for the participants however there was little in-depth discussion or collaboration due to the lack of knowledge of each other's disciplines.

- Preservice music teachers considered all of their teacher mentors to contribute equally to their development of content knowledge and pedagogical knowledge. Preservice music teachers identified their most influential mentor teacher as someone assigned to them in the role of a teacher.

- When examining a student in their student teaching semester and a first year teacher, researchers have identified common issues and struggles. These included reports of person exhaustion, a struggle for time, the difficulty to balance teaching and a normal life, a sense their opinions are not valued, concerns for job security or job searching, and a need to feel validated as an educator.

Influence on Choosing Music as a Career.

- While research on influences of being a music teacher have identified the importance of family and teachers, additional research has shown guidance counselors have provided a large amount of disapproval of pursuing a career in the music field. Preservice music teachers identified a preference to teach in a suburban area or a smaller city for their initial job placement, but recognized the fact that teacher respect relates to their contributions to the community. Preservice music teachers reported that if

teaching music was not possible at first, 50% would consider music performance while 40% would pursue teaching in another field. The remaining 10% responded they would pursue a white-collar career.

- Preservice music teachers choose a career in music for various reasons including their own enjoyment, perceived abilities, and perception of the usefulness of their music teaching to students and society.

- A study focusing on preservice string music educators identified the enjoyment in music, a desire to enrich others, and a desire to promote strings in schools as additional factors for pursuing music education careers. Preservice string teachers identified that to recruit future string teachers, responsibilities fall upon current teachers to: (a) serve as role models, (b) create of a positive learning environment, (c) demonstrate a love for teaching music, (d) allow students to have an opportunity to conduct or teach, (e) discuss the rewards related to teaching, (f) challenge students musically, and (g) take a personal interest in those who express a desire to teach.

- Following graduation from a MTE program, 68% of the students identified high or middle school as the primary choice setting for their first teaching assignment. When isolating the discipline for the teaching assignment, 51% indicated a band setting, 23% a choir setting, 10% orchestra, and 9% general music.

Career Goals/Retention.

- Preservice music teachers' success related to achievement of personal goals, mastery of challenging tasks, and collaboration with others. They did not define their individual success as a function of individual orientation, or the extrinsic orientations of ego, competition, approach success, or avoid failure.

- Preservice music teachers have numerous demands placed upon them and in turn, these demands created stress and contributed to possible burnout. Variables such as a lack of teacher or administrative recognition, the relevance of coursework outside of music, the lack of coordination between personal and institutional goals, and a sense of a lack of time to complete work may hinder the progression and development of preservice music teachers.

- A student's GPA may predict an undergraduate's retention in a MTE program.

- Most preservice music teachers prefer to teach in large and/or suburban schools upon graduation. The least selected sites included schools with primarily minority enrollment, private schools, schools in rural locations, and church-related schools. Most preservice music teachers prefer to teach in schools similar to those they attend themselves in culture and economic stature.

- Preservice undergraduate music majors were more likely to favor professional factors rather than social factors as reasons for selecting the setting for their first teaching position.

Summary of Development of Self/Beliefs. The preceding results presented an

overview of the development of a MTE undergraduate at the level of self. This section

identified twenty-four studies that examined the development of educational beliefs and

values as a teacher/musician, the evolution and influences of developing a

teacher/musician identity, positive and negative influences on choosing music education

as a career, and their goals within music education as a career including placement

preferences. Findings revealed preservice teachers related success to difficulty of a task

and benefited from support and guidance of music faculty. During socialization, family

members and music teachers served as primary influences in deciding to pursue a career

in music education. Once completing the MTE program, preservice teachers preferred to

teach in larger suburban school community or one similar to their own background

experiences.

Musicianship Skills and Analysis

A core component of a majority of MTE preparation programs is the requirement

for undergraduates to advance their proficiency as both a solo and ensemble performer

(National Association of Schools of Music (NASM) Handbook, § 8.2, p. 87, 2010). To

meet the musicianship skills for NASM accreditation, students must demonstrate:

    a.   An understanding of the common elements and organizational patterns of

        music and their interactions, the ability to employ this understanding in aural,

        verbal, and visual analyses, and the ability to take aural dictation.

    b.   Sufficient understanding of and capability with musical forms, processes, and

        structures to use this knowledge and skill in compositional, performance,

        analytical, scholarly, and pedagogical applications according to the requisites

of their specializations.

Using the NASM requirement as a delimiter, the studies reviewed in the following section examined undergraduate practice routines, performance skills, error detection, aural skills, diction, and development of their conducting skills.

The Approach of Undergraduates to Practicing.

- Undergraduate musicians demonstrated that intrinsic factors served as motivation for practicing more so than extrinsic factors such as grades. Further analysis by subgroup revealed mean scores for wind players regarding competition were higher than mean scores of string players. Music education majors scored higher than performance majors.

- Music students viewed practice as necessary but exasperating and considered sight-reading to not be an important skill. Responses to a questionnaire identified the importance of rehearsing repertoire as the critical principle concern when practicing due to the demand of performances and juries.

- Research findings revealed students who approached practice sessions using practicing strategies improved in performance achievement following both pretest and posttest performances. Students who also received strong support from peers and instructors approached practice with more fervor and maintained an ability to remain on task.

- Music undergraduates that received instruction by studio faculty on how to approach practice and goals for their individual practice sessions demonstrated effective individual practice characteristics.

- Undergraduate musicians' approaches to music practice involved many of the same strategies but implemented in differing ways. Results demonstrated practice strategies that evoked the whole-part-whole approach were a beneficial practice method.

- During individual practice sessions, undergraduate musicians who utilized a combination of mental and physical practice yielded similar results to those using only physical practice. However, the study's findings also revealed students that added vocalization to their practicing improved on a posttest performance.

- For non-piano majors, any form of piano practice demonstrated improved performance on a posttest examination when compared to participants who did not practice.

- Applied studio professors need to provide aural models in concert with specific comments for an improved understanding and execution of developing performance skills related to musical expression by undergraduate musicians.

- Investigations into the cognitive processes of undergraduates during practice revealed participants displayed an obligation to master the technical demands of a composition before working on emotional aspects of performance.

- Terminology used by student musicians to describe their practice sessions often-revealed emotions. Words reported often were defeat, pleasure, and

frustration. Advanced players often verbalized their thought process more frequently and often mentioned small goals throughout practice sessions.

- Investigation into the ability of undergraduate and graduate music education majors to identify musical expression using figurative language and specific music terminology revealed that their accuracy for using figurative language was only successful in identifying the intent of the example. When asked to the same examples of musical examples using the actual music terminology, the accuracy levels dropped.

- An investigation examined the effects of modeling methods such as guided model, model only, guided only, and practice only on the practice and performance of a musical selection. Analysis revealed that the different modeling scenarios could influence a performance. Aural modeling appeared to be as effective as practicing with an instrument.

- Music majors may improve performance during practice sessions from the use of some form of live, recorded, or computer generated accompaniment and its use may increase the probability of a successful performance.

- Undergraduates' ability to accurately transfer a prepared criterion-based one-measure performance tasks into various performance contexts such as tempi variations or melodic content were influenced by the same situations.

- The design of a left-hand keyboard technique development treatment did not reveal a significant relationship to increased left hand performance from a pretest to posttest performance.

Performance Skills/Error Detection.

- Undergraduate and graduate instrumentalists' sight-reading process involved the simultaneous demands of mental processing and technical performing skills. Research findings determined the best predictors for wind instrumentalists' sight-reading scores are rhythm reading ability and jury performance scores.

- The direction of approach to a note influenced the intonation accuracy of collegiate level. For example, ascending pitches tend to be performed sharp. Instrument concentration was also a factor in performance accuracy.

- When comparing the accuracy of responses of comparing the similarity of chords, music majors and nonmusic majors did not yield significant differences in correct responses. During the experiment, each group also tended to choose the answer appearing on the left side of a computer screen more frequently than responses found on the left of the screen.

- College/professional musicians, when supplied with a tuning pitch (sharp. flat, or in tune), often performed below the sharp pitch, above the flat pitch, and in tune with a pitch sounding at 440hz. Self-perceptions (verbal responses) of the performed pitches resulted as flat more often than sharp or in tune.

- Singing a melody by ear required fewer trials than playing of the melody on one's instrument. Vernacular musicians (those who's background is in church bands, folk bands, jazz performance) required a fewer number of

singing trials than traditionally trained musicians. Verbal descriptions by the undergraduate music majors revealed the identification of patterns within the melodies and the isolation and mental practice of smaller portions of the melody.

- In regards to the evaluation of a recorded music performance, researchers reported that music expressiveness and tone/intonation were among the best predictors of wind band performance preference ratings. Successful execution of these elements led to high marks for song preference. Furthermore, professional recording ratings were higher at slower tempos and in duration than high school or university groups' performances.

- University musicians were inclined to evaluate professional recordings significantly higher for quality of performance when compared to high school recordings. Participants provided a score awarded higher ratings than those who did not have access to a score. The use or nonuse of a score did not have an effect on overall ratings of professional performances.

- Undergraduates assigned to one of three treatment groups. Group A was error-detection practice plus shadowing, Group B was shadowing only, and Group C, the control, was self-guided practice. Participants did not demonstrate significant improvements in piano playing skills based upon the treatment, but all groups did show signs of improvement in rhythm, note accuracy, and degree of performance hesitations.

- College musicians verbally identified their process of score study for a solo score and for an ensemble score. Solo-score review before a performance revealed participants generally began by identifying the key, meter, and tempo followed by an overview of technical demands including the identification of areas of potential performance problems. Ensemble score reviews tended to unfold in a much more unpredictable manner. The identification of basic musical elements found in the solo score preparation was not as consistent in the ensemble score review process. Variations to ensemble score included identifying tutti sections, identifying if the score was a transposed on nontransposed score, and addressing the musical elements in brief and random statements. Upper level musicians utilized appropriate and specific musical terms more than lower level musicians.

Performance Evaluations.

- Research revealed a correlation between the amount of experience as a musician and accurate performance evaluation. Familiarity with the recorded repertoire provided higher mean scores for accuracy and expression.

- Undergraduate music majors and new music teachers with less than three years of teaching experience as a group identified out of tune singers more accurately than out of tune singers (63% - 65%) and there were no significant differences reported between groups. However, freshmen students responded slower to the stimulus than the other groups.

- Researchers reported that the primary instrument of an evaluator did not have an influence on assessments of junior high school student's performances. Teaching-career level and primary performance area also did not reveal a significant influence on the performance evaluations.

- Undergraduate brass players are capable of precise and honest evaluation of a peer's performance. However, their self-evaluation consistency correlated poorly with the evaluations from peers and faculty. Across peer, self, and faculty groups, the evaluations yielded consistent agreement on factors describing musical effectiveness, tone quality/intonation, and technique. However, the data indicated a less consistent amount of agreement on a factor describing rhythm/tempo.

- An experiment into the application of self-evaluation across music education performance concentration studios revealed self-evaluations usually correlated poorly, and at times negatively, with faculty and peer evaluations, but peer evaluations were generally higher than faculty evaluation.

- An experiment designed to develop a treatment condition for improving performance self-evaluation included the creation of small cohorts of peers informally discussing performances and sharing feedback. Similar to prior research into performance self-evaluation, researcher's reported that small-group interaction combined with peer feedback did not have a strong correlation with instructor evaluation nor did it have a strong effect

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on self-evaluation skills. Peer evaluation ratings were yet again often higher than instructor evaluation.

- Instructor, peer, and self-evaluation ratings and comments of teaching episodes revealed that peer ratings were consistently the lowest and self-comments made following the teaching episodes were similar in nature to peer comments. When asked to recall comments a week later, participants tended to remember comments made by peers or by instructor and peers.

- Undergraduate music education majors demonstrated that their ratings of tone quality were not related to their prior knowledge of wind instrument pedagogy nor related to their ability to write accurate prescriptive statements directed at improving uncharacteristic sounds.

- When focusing on error detection, undergraduates demonstrated improved accuracy in rhythmic error detection than in pitch error detection. When compare to undergraduates, graduate students demonstrated higher accuracy.

- When undergraduate music students are focusing on error detection in a recorded performance, research revealed participants with access to musical scores and a correct aural example demonstrated significant differences in accuracy scores compared to those participants with no score study, study with score, or score study with the use of a keyboard. As the lines in the musical score increased, their accuracy in error detection decreased.

- An examination into the ability of undergraduate brass or woodwind music majors to detect errors across multiple listenings of band excerpts revealed that the participants' response rates for accurate errors was greater during the first listening than the second and third. The most correct responses occurred in the upper two voices, while the last amount of correct responses were consistently those in the bass voice.

Conducting Training.

- For instruction of beginning conductors, research findings demonstrated that a curriculum focusing on the development of diagnostic skills did not improve conducting ability any more so than a curriculum that did not include diagnostic skills.

- Research results on the effects of an interdisciplinary method of undergraduate instruction in conducting skills demonstrated that the interdisciplinary method that included acting-based activities created for the study and the more traditional methods of conducting instruction appeared to allow equal student growth.

- The implementation of Laban Movement Theory into a beginning conducting class curriculum did not reveal any significant benefits or detriments, but the theory demonstrated some merit for implementation without concern for affecting facial or gestural expressions.

- The application of programmed instruction (predetermined video excerpts) did not contribute to developing error detection skills during a conducting situation as well as live, traditional podium based instruction. The delivery

of instruction via a traditional model or programmed model may be effective in materials related to nonconducting situations such as score study and score reading.

- Experience level did not seem to be a factor in a music major's ability to identify high or low degrees of conductor intensity, but graduate students were more accurate in identifying intensity contrasts.

- Research has shown it was plausible to develop and administer a rating instrument for different levels of conducting. The *Conducting Rating Instrument* was consistent and accurate in an evaluation of posture, baton grip, preparatory gesture, ending gesture, pattern, left hand, cues, facial expression, and gestural expression.

- The *Conducting Ability Measure* developed for a study investigating the ability of undergraduates to communicate through gestures did not yield statistically significant differences in overall mean score improvements between groups. However, the treatment group demonstrated higher mean scores than the control group in left hand, beat-pattern, dynamics, articulation, phrasing, and expressive parameters.

- An exploration into the effects of utilizing an aural model in score study and during conducting practice revealed participants who used the model scored a higher performance mean score than did participants in the control group.

- The cognitive workload during conducting involves the simultaneous tasks of aural analysis and conducting gestures while actively conducting in a

performance setting. Research findings identified a "cognitive bottleneck" between aural analysis and attentional allocation during a performance. Undergraduate conductors often times do not have the opportunities to develop these individual tasks to a level of comfort.

- A treatment involving conductor directions, student performance, and conductor feedback provided an effective model to achieve improved undergraduate ensemble performance.

- Music education students responded more efficiently to a combination of modeling conducting gestures and verbal descriptions than only a conducting gesture or only a verbal description. The undergraduates viewed the combination of modeling and verbal reinforcement as being associated with teaching effectiveness.

- Music theory students enrolled in music courses at a large university school of music in the Northwest demonstrated evaluated ensemble performances by rating the high-expressivity or low-expressivity of a conductor. Their results revealed the expressivity of the conductor had a significant effect on how listeners evaluated the expressivity of the performance.

Summary of Musicianship. The development and examination of musicianship skills emerged as a dominant area of investigation among preservice music teacher research. Forty-seven studies found within this section investigated the development of musicianship and performance skills. Analysis of the studies revealed undergraduates perceived practicing as a necessary task and were intrinsically motivated. The application

of practice strategies, accompaniment of some type, discussions with studio professors regarding practice, improved the success of practice session.

Research into the performance evaluations conducted by preservice music teachers revealed instrumental preference did not influence performance evaluation, peer ratings were consistent, undergraduates identified rhythm mistakes more than other music elements, and multiple listening responses did not increase accuracy.

MTE Undergraduate Instruction

The National Association of Schools of Music (2010) identified specific course requirements and content required for MTE programs to earn accreditation and to prepare a student for a career in music education. The NASM Handbook states in Section IX:

In addition to the common core of musicianship and general studies, the musician electing a career in school-based teaching must develop competencies in professional education and in specific areas of musicianship. Professional education components should occur in a practical context, relating the learning of educational principles to the student's day-by-day work in music. Students need opportunities for various types of observation and teaching.

Within the curricular guidelines above, attention should be given to breadth in general studies, attitudes relating to human, personal considerations, and social, economic, and cultural components that give individual communities their identity. (pp. 97—98)

The following section puts forth investigations that related to the required NASM program content such as methods coursework (courses which discuss the methodologies, materials and curriculum for music teaching), instrumental/vocal technique coursework

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(courses that provide undergraduates the ability and skills needed to perform on and in turn provide instruction on various instruments or vocal production), technology courses, social considerations of students (culture, special learners, etc.), educational courses and evaluation of teaching.

Learning process.

- Upper-level undergraduate music majors demonstrated higher-order thinking skills than prospective freshmen in an observation task. The responses of the upperclassmen provided more accurate and descriptive inferential statements regarding the task.

- Undergraduates created and peer taught an assignment using body movements to depict certain musical elements (form, pitch, and rhythm. The intent of the investigation was to examine any relationships between academic performance and the effectiveness of the teaching episode. Results indicated that both GPA and scores on the ACT correlated highly with judges' evaluation of effective presentation of the elements in the teaching episodes.

- Research examined the source of music education undergraduates' source(s) of Pedagogical Content Knowledge (PCK). Utilizing the categories of either intuition, apprenticeship of observation, methods courses, cooperating teacher, or other, results of participants' responses did not define a single source of PCK. The authors did report that apprenticeship of observation, strategies discussed in methods courses,

and a students' cooperating teacher were each reported twice as sources of PCK.

- A qualitative investigation examined how 43 music education majors learned to teach elementary general music. Emergent themes identified that: (a) novice teacher's beliefs are highly socialized around the culture of performance, (b) the novice teachers tended to construct identities from their involvement with music and becoming a musician, (c) the content of methods courses affects students' beliefs and images while engaged in a practicum, (d) participants discussed how they want to be perceived as teachers, and (e) these beliefs do not remain static and often interact and change over time.

Methods courses.

- Undergraduate music majors had thoughts about, expressed concerns about, but reported they would be comfortable to teaching outside their area of concentration (instrumental or vocal). They expressed confidence in their methods coursework and believed the course would provide them the knowledge and skills to be effective teachers.

- Undergraduates who had received instruction in improvisational skills and how to teach improvisation to others successfully demonstrated that a methods course could prepare future teachers to teach improvisation. Opportunities for peer teaching of the skills aided in the development and delivery of teaching ideas.

- Research revealed undergraduate music majors who experienced a higher number of Authentic Context Learning activities earned higher evaluation scores on teacher effectiveness than undergraduates with fewer Authentic Context Learning activities.

- Third-year undergraduate music majors viewed the process of learning to teach as complex and rigorous, similar to the process of learning to perform musically. Participants negotiated the process of learning to teach by: (a) looking for expert models, (b) rehearsing or problem-solving between lessons or classes, and (c) seeking out other practitioners for useful feedback and support.

- Reflective practice, a learner-centered model that emphasizes self-evaluation and professional responsibility, is a concept often discussed in teacher education programs. An investigation into reflective practice and music education majors found undergraduates preferred the reflective model to the traditional lecture and test format. Music students strongly believed the reflective process had contributed to improvement in their teaching over time.

- Student-written cases reflected on an undergraduates' teaching or specific event and aided in the development of an understanding of the finer points of teaching by expanding their situational knowledge base. The writing activities allowed reflection on personal experiences and situations helping them prepare to teach in a variety of scenarios.

Instrumental and Vocal Technique Courses.

- Socialization and the role of peers in providing a high opinion of a course or instructor had an effect on an undergraduates' investment into that course. An additional factor for investment was an undergraduate's prior experiences or degree of prior content knowledge found in the course. Did undergraduates believe they could learn new information from the course?

- A qualitative investigation examined the degree of music education majors' investment in courses taught by graduate student instructors. Factors influencing investment of the music education students included: (a) direct involvement by a faculty member, (b) access to appropriate resources, (c) rigorous assessment, (d) a well-prepared course instructor with appropriate background, and (e) a flexible course content. Undergraduates identified the following basic characteristics or requirements for graduate student instructors: extensive teaching experience, high facility on multiple instruments, high professional status, and high confidence.

- Research into the role of piano proficiency from the viewpoint of students and the institution revealed a need for clarification in the requirements and expectations of undergraduate music teachers' ability to demonstrate proficient piano skills.

- An examination into how preservice teachers perceived reading in the content area revealed reading as a transition with text. Literacy that is part of a constructivist curriculum engaged students in learning, the

development of readers was fostered through apprenticeships or authentic

experiences, and to focus preservice teachers' orientation on reading

required a practicum and/or field-based teaching experience during

methods courses.

- A researcher designed diagnostic test of cello technique comprised of a

  written test, performance task, and self-evaluation was beneficial in

  evaluating students and charting their course of study. Specifically, the test

  was an efficient means in identifying the strengths and weaknesses in an

  undergraduates' cello performance technique.

Instruction Using Technology.

- In an examination of technology required courses at two universities and

  their relation to music education students, a researcher reported the

  courses focused on Musical Instrument Digital Interface (MIDI), digital

  accompaniment, or using notation software. The results of the study

  demonstrated a lack of music technology integration despite awareness

  and acknowledged support of administration and faculty to improve music

  technology integration in the program.

- Music students that received instruction in the use of the International

  Phonetic Alphabet (IPA) symbols for phonetics and diction of foreign

  languages scored higher on a pretest posttest evaluation when compared to

  traditional ways of instruction to diction and foreign languages for choral

  works. Participants who received the instruction in IPA via computer

  assistance reported frustrations related to the actual software.

- The design of two versions of a software program compared the effectiveness of computer-based expository and discovery methods of instruction for the aural recognition of selected concepts. Both methods of instruction aided in fostering the aural recognition of the musical concepts and the ability to define the concepts verbally, but neither offered a significant benefit over the other.

- The implications of using video-conferencing for distance general music instruction demonstrated drawbacks such as technical difficulties, time delays, an inability to sing at the same time as students, and a lack of physical proximity. However, beneficial outcomes included student enthusiasm, interest in cultural context by the undergraduates, and an increased access to music education for students who may not have otherwise received music instruction.

- Computers were included in an investigation of instruction in appropriate rubato technique. Following a pretest posttest design, the participants applied significantly more rubato in their posttest performance.

- Participants provided with professional recorded models of rubato recorded what they considered an accurate replication. The results of the experimental groups' posttest scores significantly correlated with the provided model.

- An investigation into the use of technology and music education undergraduates used software entitled eMirror; a program that facilitated targeted self-observation and data collection. After only one observation

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evaluation using the software, the participants demonstrated significant improvement in their use of eye contact with students.

- The qualitative analysis of electronic portfolios created by ten undergraduates enrolled in music methods and practicum courses revealed that the creation of goals aided the undergraduates to reflect on questions, possible solutions, and to re-evaluate their perceptions of problems or solutions.

Diversity/Multiculturalism/Special Learner Instruction.

- A study revealed that access (what preservice teachers receive), equity (fair and just expectations), and quality (the degree of excellence or standards) were key to working with assorted cultures in an attempt to establish an internationalizing process for teaching general music.

- Despite the well-accepted need to implement various music styles and multiculturalism in music education programs, an investigation revealed a majority (92.83%) of time involved discussion of traditional western art music in music theory, history, and performance courses.

- Undergraduate music majors immersed into a choir consisting of secondary school students with mentally handicapping conditions or completed an assignment requiring them to spend time outside of class with individuals of differing backgrounds than those of the students. Due to this immersion process, music education students' demonstrated an increased awareness and comfort level with individuals from diverse populations and special needs students.

- Following instruction, discussion, and reflection on strategies for teaching students with special needs in a long-term field experience, future music teachers revealed an increased comfort level in teaching students with special needs, an increased confidence in teaching students with special needs, and an ability to articulate how children with disabilities learn.

- Additional field experiences involving teaching strategies for students with special needs demonstrated increases in preservice teachers' comfort levels in interacting with persons with disabilities, increases in the educational preparation to work with students with special needs, and increases in positive effects in regard to working with students with special needs.

- Following the opportunity of preservice music teachers to engage in field experience with special needs students in self-contained, special education classrooms, results showed the preservice teachers' perceptions of the behavior and learning capabilities of the students with special needs, compared to other children of the same age, did not change significantly after the field experience. However, the attitudes and perceptions when interacting with individuals with special needs did became more positive after the field experience.

- Immersion of music education students into a culturally diverse setting for an internship increased the participants' awareness of racial slurs, established new views on diversity, and aided in establishing new goals as a teacher related to diversity.

Lesson Planning.

- Undergraduate preservice teachers' views on lesson planning revealed that several of the participants viewed lesson planning as unnecessary and demonstrated strong differences between subjects concerning their apparent desires or abilities to think in advance about teaching.

- Examination of elementary general music student teachers' curricular concerns during planning lessons provided emergent themes such as aims/goals/objectives/scope/sequence, content/concept, activities, nature of learner, evaluation of pupils, and self-evaluation. Findings further identified that the participants tended to work within a framework of goals, constructed objectives for each lesson, planned activities, and evaluated pupil success in relation to the established objectives. Researchers further identified that the cooperating teacher served as a primary influence on the manner in which the student teacher identified objectives or curricular goals.

- A comparison of experienced teachers lesson plans and the lesson plans of preservice teachers exposed differences. Experienced teachers' lessons were more concise about their thoughts and planning for a lesson. However, the amount of detail in their plans seems more idiosyncratic to their individual style than experience level. Lesson plans from all participants showed common teaching strategies such as the decontextualization of material, repetition, and modeling.

- An analysis of 70 preservice teachers' (elementary, music education, art education, and physical education) lesson plans regarding multicultural lessons within their discipline, determined that the participants had an ability to locate appropriate materials, information, and visual aides for multicultural topics.

- A comparison of familiarity of basic song repertoire between music education/therapy majors and elementary education majors revealed that the music education/therapy students possessed a greater song knowledgebase than the elementary majors.

- An examination compared preservice and experienced teachers' perceptions of band music content and quality. Findings of the study supported the idea that the level of teaching experience was not a factor. Preservice and in-service teachers appeared to be similar in their ability to gain information from a score. During the score study process, melody appeared consistently as a focus by all participants.

Undergraduate Aural Skills Instruction.

- Research findings supported the concept that measure of musical aptitude, academic ability, and music experience often affected a music theory students' achievement in development of aural skills.

- An eight-week training program for undergraduate music majors included materials to improve audiation and the ability to perform implied harmonic accompaniments. Following a pretest posttest examination,

findings revealed the treatment was effective implying that music students could learn techniques to audiate-implied harmony.

- In an examination of strategies to improve harmonic error detection, music students enrolled in a piano course either used a keyboard as an aide in sight-reading or listening models. Those participants with access to the listening models displayed better accuracy in harmonic error detection than did students with keyboard access.

- Undergraduates were not successful in singing a melody on a neutral syllable from memory after only one hearing.

- The test results of a researcher-created method of note reading and learning revealed that two thirds of the participants scored higher note accuracy with the aural participation treatment than with their own personal procedures for note reading, however, the ANOVA results showed no significant differences.

- When examining strategies for melodic dictation, (listening to the melody and simultaneously dictating the melody, listening to the melody in its entirety and then dictating, or listening to the melody in its entirety and then provided the starting pitch of the melody and asked to dictate) there were no significant differences found between the strategies. However, analysis between the groups revealed those undergraduates who wrote while hearing the melody twice and writing after hearing the melody twice produced higher scores compared to the other groups.

- Further research in dictation strategies for undergraduates revealed instructing undergraduates to focus on rhythm increased their rhythmic accuracy. However, isolating the pitch did not have the same result. The addition of the use of a visual aide did not appear to have an influence on undergraduates' scores.

- Students enrolled in a music theory class responded to a survey asking their attitudes regarding instruction via a computer-based melodic dictation program. Responses revealed most (80%) of the participants did not view the treatment as favorable. Additionally, the program required too much time commitment outside of class, too much progress was expected in too little time, and the pacing (increasing of difficulty levels) was not consistent throughout the levels.

- An experiment utilizing a researcher designed computer instruction program titled Harmonic Intonation Training Program (HITP) demonstrated that its use might be beneficial to developing harmonic intonation without taking from class time.

Teaching Strategies/Teaching Effectiveness.

- An investigation into effective teaching strategies for choral expressive performance revealed that teaching keyword emphasis and phrase shaping might be effective techniques.

- University students with musical experience learning efficiencies and recognition memories improved when receiving new material in their preferred presentation (learning) modality.

- An investigation into the modification of instruction pacing to accommodate the least skilled undergraduates in a piano class demonstrated that all students enjoyed the repertoire and identified the instructor as helpful and positive. Modifying the sequence of instruction to accommodate less skilled players did not appear to have an effect on the remaining students' perceptions of instruction pacing or level of interest in class activities.

- A treatment designed to aide preservice teachers in intervention techniques increased their comfort level and reduced the amount of personal advice or self-disclosure by the participants.

- Sequential patterns of instruction during an ensemble rehearsal by preservice and experienced teachers revealed the presentation of musical information occurred at a very low rate for preservice teachers. The preservice teachers tended to speak too much especially when providing instructions. Experienced teachers were prone a high rate of disapproval during instruction.

- Novice and in-service choral directors' perceptions of teaching effectiveness increased when using Rehearsal Frames as an instructional aide. The results revealed differences on scores from novice and inservice teachers on individual teacher effectiveness characteristics.

- Modeling, discrimination, and diagnostic/predictive skills of preservice teachers contributed to the variance in instructional effectiveness. Results demonstrated that discrimination without diagnosis and prescription is of

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minimal value in regards to effective teaching but modeling skills were the strongest contributors to variance in instructional effectiveness on a consistent basis.

- A questionnaire completed by preservice and experienced teachers attempted to identify skills and behaviors important for successful music teaching in the first three years of teaching. Experienced teachers ranked enthusiasm, time on task, student behavior, and patience higher than preservice teachers did but they rated creativity and display in a high level of musicianship as lesser skills than preservice teachers. Seven items were common responses: (a) Be mature and have self-control, (b) be able to motivate students, (c) poses strong leadership skills, (d) involve students in the learning process, (e) display confidence, (f) be organized, and (g) employ a positive approach.

Field Experience/Student Teaching.

- Preservice music students' perceptions of what they considered to be essential skills, abilities, and understandings in regards to teaching may be dependent on where they are in their various stages of development. Responses revealed some participants tended to focus on skill sets that would provide success in student teaching while others identified experiences outside of the MTE curriculum as being important for student teaching success.

- Responses by preservice teachers following various education field-experiences demonstrated they were basically satisfied with their teaching

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experiences but identified areas in which they would like additional

instruction prior to student teaching such as classroom management,

student with special needs, and keyboard work.

- Examining preservice music teachers' perceptions of field experiences via

  Dewey's theory revealed all types of teaching experiences seemed to

  appear to encourage a balance between doing (action) and the undergoing

  (reflection). Participants reported peer-teaching experiences as being

  beneficial for learning lesson sequencing and identified teaching

  experiences as critical in aiding their preparation for student teaching.

- Preservice music teachers involved with student teaching or field

  experiences reported that the best part of the day was centered on aspects

  of student teaching such as talking with teachers, selecting music,

  planning time, etc. while the negative aspects related to poor student

  music making activities.

- Research findings suggested that student teachers' beliefs about learning

  and teaching strongly influenced their instruction of and interaction with

  students. Student teachers' who viewed themselves as facilitators of

  learning regularly encouraged diverse responses to music from their

  students, engaged their students in questioning, cooperative learning tasks,

  and small-group activities.

- An investigation into the relationships of cooperating teachers and the

  preservice music teacher demonstrated that cooperating teachers felt an

  autonomy that gave them authority to make decisions independent of

external factors. The student teachers were not always pleased with the cooperating teachers' behaviors but the student teachers feel a responsibility to imitate these actions. Finally, although college coursework helped to prepare preservice teachers for practicum experiences, many student interns still felt anxious and uncomfortable in front of high school students. The participants felt that the lesson planning did not prepare them for actual delivery of instruction to high school students. Participants reported they felt musically inadequate, lacked conducting experience, and felt awkward relating to the high school students.

- A close examination of preservice music teachers' perceptions of student teaching showed a difference in attitudes. The notion of submitting lesson plans to the cooperating teacher brought mixed results. Of the university supervisors, 92% agreed they should; however, 60% cooperating teachers and 69% or student teachers responded they should not. Most respondents (67%) reported a GPA of 3.00-on a 4.00 scale-should be the minimum for a beginning music student teacher. Evaluation of the student teacher should be done by the cooperating teacher using their own criteria for evaluation and provide a final recommendation to the supervisor and that evaluation counting for 50% of the final grade. According to the participants, 48% reported the university supervisor should conduct classroom observations every other week, while 40% responded three observations during the experience would suffice.

- Additional research into the relationships of student teachers and cooperating teachers revealed five main themes. First, cooperating teachers desired a personal connection with their student teachers and a relationship that was trusting, respectful, and resulted in learning for both parties. Next, cooperating teachers valued specific characteristics, particularly personal and professional characteristics, in their student teachers and looked for those as a basis for forming the relationship. The third theme involved a power sharing ceiling, where throughout the student teaching experience, power sharing in the classroom moved back and forth along a continuum from least power sharing to most power sharing between the student teacher and cooperating teacher. The final theme discussed the notion that student teaching informs and nourishes the teacher identities of both student teachers and cooperating teachers. Data revealed the theme that was the most influential experience for approaching the role of cooperating teacher is one's own student teaching experience.

- Additional research identified five themes that establish a beneficial environment for transition into the teaching professional world. The themes required fulfilled expectations of both parties, effective preparation of the student teacher for the experience, capable application of content knowledge by student teachers, increased professionalization, and successful induction of the student teachers as professional teachers.

- An investigation that examined reflective dialogues between preservice music teachers and their cooperating teachers reported that student teachers often reflect on technical, clinical, and personal issues about their teaching rather than critical topics.

- Undergraduate music education majors that had received instruction and peer rehearsing of classroom management techniques such as the ability to sustain multiple activities, good lesson continuity, good lesson variety and pacing, etc. displayed substantial gains in self-efficacy compared to a group of undergraduates that only viewed videos and had discussions on classroom management techniques.

- An inquiry into the effects of student teaching experiences and cooperating teachers on the classroom management beliefs and skills of preservice music teachers revealed those beliefs to be similar at the beginning and end of student teaching. This finding suggested that during the course of a student teaching experience, there were no changes in classroom management beliefs.

Community and Service-Learning.

- A case study into preservice music teachers participation in service learning revealed participants reported feelings of anxious anticipation and some degree of confidence due to the preparation and opportunity to rehearse a lesson during class to peers. Analysis of the participants' reflections revealed that the university students thought the younger students enjoyed music and hoped those students would continue to

participate in music activities. They found themselves to be flexible and accommodating to the community students. At the beginning of their MTE program, the preservice teachers were dealing with inexperience, but demonstrated an ability to evaluate their strengths and weaknesses through the field experience. The participants showed an aptitude for applying the strategies, skills, and techniques presented in the course accompanying the community experiences.

- An investigation into preservice music teachers' professional goals and their perceived value of the National String Project Consortium revealed 71% of the student teachers were currently in the process of obtaining a music education degree, and 80% responded that they would eventually teach in schools. The student teachers provided positive evaluations of the master teachers in the program and recognized their high-quality feedback.

- An urban music education department collaborated with an outreach organization to provide after-school music courses for at-risk children. Music education majors in the program responded with a sense of success with the following goals: (a) moving to music, (b) acting as a positive force, and (c) performing/listening to a variety of music. The student teachers reported the goals of composing and improvising were the least successful. The student teachers revealed many positive aspects to the program such as the opportunities of at-risk students, enthusiasm of program participants, and the opportunity for real life teaching.

- Preservice teachers who experienced a year-long school of music partnership in a rural, culturally distinctive community realized the importance of understanding another culture, identified that the children were anxious to learn, and the student teachers enjoyed the experience of teaching in a real classroom.

- Perceptions of preservice music teachers participating in a service-learning partnership changed as they progressed through the experience. The perceptions of the rigor of teaching elementary music changed - what they thought would be easy, was not so easy. Participants revealed that the feedback on their lesson plans, access to model lesson plans and sources, and reflection assisted them in their in-service learning. The class lecture and discussions were beneficial because of the immediate connection to the public school classroom and their interactions with real life students.

- Service learning served as a music teacher preparation practice within an elementary general music methods course for ten preservice music teachers. During this investigation, the use of scripted lesson plans aided the participants in understanding techniques and focused their delivery of instruction thus improving the learning experience for the children. Results further demonstrated the scripted lessons boosted their teaching confidence. The participants responded that they enjoyed the authentic context learning. The feedback provided to the student teachers' teaching permitted the participants to focus their self-evaluations and guided the preparation for upcoming lessons.

- Students working with first-grade general music students valued the authentic context experience. Participants in the study responded that they recognized they were the only music teachers for the children and expressed concern regarding the effectiveness of their teaching.

Evaluation of the Teaching of Others.

- The evaluation of the cognitive processes of preservice teachers' music instruction revealed preservice music teachers tended to focus comments about their observations on the subject who was the primary center of attention in a teaching video. If the teacher was the main focus in the video frame, they received the most comments. If students were the main focus in frame, then they received the most comments.

- Teaching evaluations and comments by preservice music teachers from Italy and the United States showed Italian participants remarked more on student performance (17% to 7%) and lesson content (16% to 10%), while the US participants' remarks focused on classroom management (19% to 7%) and teacher feedback (11% to 4%). Participants from both countries evaluated individual teachers differently from each other. However, a comparison of each participant's ratings for individual teachers showed the participants ranked the individual teachers in the same identical order.

- An additional investigation into international comparisons of teacher evaluation examined whether preservice teachers could discriminate between novice and expert choral directors regardless of the proficiency of the choral ensemble. International participants gave similar rankings to the

expert teachers as well as the novice teachers, regardless of the ability of the ensemble. The distinction between novice and expert teachers also appeared when participants identified one of the novice teachers in the stimulus video as not being a choral student.

- Research into the effect of experience level on the evaluation of others' teaching exposed a clear differentiation of music teaching expertise and level of preparation in a music education degree program. The differentiation emerged due to analysis based on factual versus inferential content supplied during an evaluation.

- The observational skills of prospective music majors and junior music education students demonstrated that the responses of upperclassmen observations of music instruction settings, when compared to prospective freshmen, were factual in nature, not inferential, and displayed higher-order thinking skills.

- An investigation to see if preservice teachers could identify methodologies used in elementary music teaching episodes indicated the participants were more accurate at identifying the Kodály method when viewing the teaching excerpt containing the use of sol-fa and the Orff method when viewing the excerpt utilizing Orff instruments. Findings of the remaining three episodes yielded few correct responses from all participants.

- A study assorted scripted rehearsals in order to determine whether preservice teachers could identify teaching strategies by presenting the participants with a variety of process-oriented (conceptual) and product-

oriented (nonconceptual) strategies in ensemble settings. Instrumental students consistently scored higher on identifying conceptual versus nonconceptual scripts though nonmajors scored somewhat higher overall and achieved a higher correct response rate than other groups when evaluating scripts related to dynamics, texture, and intonation.

- An investigation of 188 elementary education majors and 99 music students examined the perceived differences between three different teaching styles and their rating of three-scripted lessons of lecture, questions, and feedback teaching styles. Results indicated that both music majors and elementary majors are similar in their perception of their own teaching style as well as their identification of perceived differences among the three different teaching styles. The participants consistently perceived the lecture style negatively.

- An investigation into the evaluation of music instruction by musicians and nonmusicians assigned different observational tasks exposed significant differences between music majors and nonmajors in their evaluations of music teaching on selected variables. Music majors reported a greater number of teacher approvals than nonmajors. In addition, the observation task may affect the observers' evaluations. For example, participants who followed teacher approvals only reported a higher number of approvals than did the group responsible for reporting either approvals or disapprovals.

- Comparisons of preservice and experienced teachers' ratings and comments on teacher effectiveness, in addition to student learning, following an observation of videotaped music classes revealed that the experienced teacher group wrote a considerable number of comments (535 comments) about the teacher and fewer about the students (318 comments) compared to the prepracticum group (453 teacher comments; 339 student comments) and considerably fewer than the postpracticum group (547 teacher comments, 423 student comments). Experienced teachers were more critical in their evaluations and responded with judgmental comments more than the preservice teachers did.

- An investigation into the nonverbal behaviors and rapport of music education and music therapy students revealed verbal interactions are no more important that the visual affect an individual brings to teaching and preservice teachers or therapists should begin to hone their teaching persona.

- A comparison of music education majors and nonmusic education majors' evaluation ratings of teacher behaviors and music instruction showed no significant relationships were found in the evaluation ratings among the four observational tasks. Observers monitored and recorded one of four different observation tasks (teacher reinforces correct responses, gives corrective academic feedback, reinforces appropriate behavior, and gives corrective social feedback). The researchers also reported an apparent lack

of any type of relationship between the specific data recorded by observers and the same observers' subsequent evaluations of teaching performance.

- Multiple case study methodology examined the nonverbal communications and role perceptions of preservice band teachers and the extent to which these individuals found meaning and value in theatre seminars. The seminars provided participants an increased awareness of their nonverbal communication behaviors in the classroom and displayed potential to be meaningful and valuable with respect to their perceptions of their roles as teachers.

- Graduate and undergraduate music majors evaluated the use of rehearsal time, musicianship, accuracy of instruction, student attentiveness, student performance quality, and overall teaching effectiveness during choral rehearsals. No significant differences or interactions emerged between groups (graduate or undergraduate) or concentration (vocal or instrumental). The results revealed that the highest rated excerpt contained less off-task student behavior, a higher percentage of approvals, more eye contact, more activity changes, and that the average length of both teacher and student activities was 5-6 seconds.

- An additional investigation into the effect of observation focus of choral rehearsal excerpts demonstrated that participants awarded higher ratings to excerpts where the teacher was the focus and lowest rating when isolated focus was on the students. The participants evaluated researcher-selected teaching characteristics such as the use of rehearsal time, musicianship,

accuracy of instruction, student attentiveness, student performance quality, and overall teaching effectiveness. The evaluators in the teacher focus group expressed frustration at evaluating students without the ability to see them. However, the evaluators in the student focus group did not take issue with the inability to see the teacher.

- Three experiments found within one study examined the effects of assorted combinations of instruction, observation training, and practica, followed by competency-based videotape self-observation on participants' use of sequential instruction in a rehearsal. Findings reported that in each of the three experiments, (a) undergraduates significantly increased their use of complete sequential patterns, (b) the amount of time spent on teacher feedback increased significantly in all three experiments, and (c) there were significant changes in time spent in sequential patterns.

- An investigation revealed that the perceptions of observers informed of the proximal goals of instruction differed from those who were not. Results reported that the music education majors wrote significantly more statements that addressed teacher behavior than statements that addressed student behaviors. Participants not informed of the instructional goals provided more teacher-focused, positive, and inferential statements than did preservice teachers who were aware of the goals. For both groups, 80% of the statements pertained to the teacher while only 14% pertained to students.

- An additional study on the patterns of instruction examined the effects of sequential patterns and different modes of presentation: (a) observing and evaluating video with audio, (b) audio only, (c) video only and (d) written script only) on the evaluation of music teaching by experienced music and nonmusic teachers and university music and nonmusic students. Findings demonstrated that the evaluations of experienced teachers were significantly higher than those of university students while nonmusicians' evaluations were higher that musicians. Patterns of instruction that began with musical information received higher ratings than those beginning with directions. As for the mode of presentation, audio-video and video only earned higher ratings while the lowest evaluations occurred in audio only and script only presentations.

- A comparison of three career levels and preservice teachers use of verbal instructions in instrumental rehearsal revealed the most frequently addressed elements for all three groups were rhythm and tempo. Experienced teachers dedicated more time to overall ensemble sound and 23% of their rehearsal segments were complete sequential patterns. Novice teachers dedicated time tuning individual notes and student teachers spent more time identifying and correcting wrong notes. When utilizing instruction on the use of sequential patterns for the undergraduates, the percentage of complete sequential patterns found in their instruction nearly tripled.

- The examination of patterns of instruction appeared at the international level. An evaluation of teaching segments by Japanese and American students revealed Japanese students rated the teaching lower than the Americans did; however, the instruction was in the Japanese language. All evaluators were successful in evaluating student on-task behavior, teacher enthusiasm, and pacing of instruction.

- A study focusing on graduate and undergraduate music students' perceptions of lesson quality and teaching effectiveness required participants to respond to two questions: (a) how interesting was this lesson and (b) how much did you like the way the teacher taught this lesson? Participants responded using a Likert-type scale of 1-5 for each question. Findings of the study showed significant differences not only by academic standing, but also by music teacher classroom delivery technique and lesson content quality. Participants preferred teaching episodes with good teacher-delivery skills and found them to be more interesting than those lessons with poor teacher delivery, regardless of lesson content quality. Furthermore, effective teacher-delivery skills enhanced student liking and interest in lessons, regardless of their content.

- Possible relationships of nonverbal behaviors and perceived effectiveness and rapport were at the center of an investigation for novice and skilled music teachers. Participants provided observational comments and assigned a numeric rating for rapport and effectiveness after viewing videotapes of four choral teachers' rehearsals. Once again, experienced

teachers provided higher ratings than novice teachers. The positive/negative comment ratio was generally reflective of the evaluation score. The teachers' ratings and comments influenced the evaluators' ability to observe nonverbal behaviors. The greatest numbers of comments provided by expert teachers focused on nonverbal behaviors.

- To analyze conceptions of teaching effectiveness, microteaching experiences, and teaching performance, music education majors enrolled in an introductory music education course constructed concept maps for analysis. The *Survey of Teaching Effectiveness* measured teaching performance. Results of the finding supported the concept that at this early stage, understanding of effective teaching is still in the formative stage. The microteaching episodes appeared to have a direct impact on the participants' thinking process and skill development.

- The effect of accuracy of instruction, teacher delivery, and student attentiveness on musicians' evaluation of teacher effectiveness involved 168 musicians of various experience levels (grade 6 through experienced teacher). Findings of the study revealed secondary schools students provided high ratings to a teacher giving inaccurate information if the teacher demonstrated high delivery skills and the class was attentive. Experienced teachers dedicated comments to accuracy of instruction more than other groups while middle school students dedicated attention to student attentiveness more than any other group. Additional findings suggested that the high/low delivery of the teacher might have had a

greater influence on secondary music students' perception of effective teaching than the accuracy of the teacher's instruction and the social behaviors of the students.

- During an investigation into use of classroom instructional time by preservice and experienced teachers, student teachers delivered the most "teacher talk" and involved student performance the least. Experienced teachers demonstrated an ability to organize rehearsal time evenly between warm up and musical selections, had students on-task the quickest and talked the least during rehearsals.

- Applied lessons served as the environment of an investigation on pedagogical techniques and student outcomes. The investigation examined the effect of the level of teaching experience on student progress and performance quality in an introductory applied lesson. Results revealed applied students of experienced teachers talked more than did students of preservice teachers, however the preservice teachers spent more time modeling. Experienced teachers tended to provide more feedback than the preservice teachers in the form of approvals or disapprovals.

- Researchers investigated the effects of aural-model rehearsal preparation on teacher verbal behaviors that focused on performance and teaching variables. The teachers' verbalizations tended to reflect a greater concern for accuracy in the group with access to a recorded model. Teacher feedback remained mostly unchanged with positive feedback being more frequent than negative feedback.

- A comparison of music therapy and music education majors' perceptions of teacher feedback reported both groups responded that the kindergarten teacher they were evaluating in a video did not provide enough approval during instruction. Music education students estimated a greater amount of time was committed to teacher approval.

- In an attempt to identify an understanding of effective teacher approval/disapproval, researchers reported participants instructed in behavioral techniques and those who had not received the training both identified approval as "good", "beneficial", and "effective" but disapproval statements were not.

- Results of an examination to whether preservice teachers' training on the ability to recognize a need for providing approval/disapproval for appropriate/inappropriate student behavior was beneficial. Participants demonstrated that learning to identify situations in which they can recognize opportunities to provide conditional approval was possible.

- Researchers investigated whether different forms of instructors' verbal corrections affected third-party observers' perceptions of teaching and when viewed in the context of successful one-on-one lessons. Findings showed the verbalizations used to make the corrections by instructors in student performances did not affect student attitude or achievement, nor did they affect observers' perceptions of teaching and learning.

- The perceptions' of four preservice music teachers regarding elements of verbal and written feedback as well as guided reflections during an early

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field experience program revealed the participants acknowledged that all forms of feedback were highly effective. Written feedback, in particular, was beneficial in serving as a reminder of events from previous teaching episodes and was a reference item when planning the next teaching episode.

Self-Evaluation of Teaching.

- A researcher design treatment focused on teaching behaviors such as model performance, stick symbols, verbal behaviors, and teaching signals (preps) demonstrated the participants increased their use of the defined teaching behaviors in their instruction.

- Preservice music student teachers' self-assessments showed an awareness of their overall teaching effectiveness and intensity, however the self-assessments did not reveal an ability to address specific teaching behaviors.

- Relationships emerged between preservice music teachers' teaching effectiveness and social skill scores. Emotional Expressivity, Emotional Sensitivity, and Social Control scores assessed via the *Social Skills Inventory* (SSI) (Riggio, 1989) were an effective predictor of high scores in teaching effectiveness (*Survey of Teaching Effectiveness* (STE) (Hamann & Baker, 1985).

- The identifying, evaluation, instruction, and application of teacher intensity, as a concept, to student teachers revealed a possibility of incorporation into instruction. Music student teachers trained in the

demonstration and application of intensity scored higher than those groups that did not receive the training. Implying, those who experienced the treatment were able to define, identify, and include teacher intensity while also explaining the particulars of high and low teacher intensity.

- An investigation into the feasibility of utilizing a researcher-created *Instruction* and *Delivery Forms* to assess teacher intensity showed the *Delivery Form* responses indicated a relatively high relationship between the instructor and participant responses in enthusiastic delivery of academic information, inappropriate noise behavior, inappropriate motor behavior, and inappropriate passive behavior. However, results of the *Instruction Form* comparisons revealed that agreement was not as consistent between the instructor and the participants across the categories of accurate and appropriate instruction, too much information, too little information, redundant information, and incorrect information. The investigation demonstrated improvement for all participants in teacher intensity across all four lessons in both appropriateness and effectiveness of delivery.

- Relationships between the portion of time spent on particular pedagogical behaviors such as total lesson time, setup time, time spent talking, time spent modeling, and student performance time and the preservice teachers' perceptions of their own time use during instruction revealed the greatest amount of participants' time was spent talking a little time spent modeling. A self-assessment of their use of time during a lesson revealed the student

teachers highly (9.36/10) believed the procedures they followed in the lesson enabled the students to accomplish established goals and objectives of that lesson.

- The effectiveness of self-evaluation served as the center of an investigation attempting to improve the allocation of selected teacher and student teachers in lab rehearsals. Analysis revealed that participants had a tendency to include a large amount of non-essential verbal instruction in the first rehearsal, which in turn resulted in a higher percentage and longer average mean duration of teacher talking. Participants often indicated that they were surprised by the amount of rehearsal time devoted to teacher behaviors versus student behaviors. As participants progressed through the four rehearsals, the percentage of time devoted to teacher behaviors (teacher talk) decreased.

- A study examining the relationship of behavioral self-assessment to the achievement of basic conducting skills revealed the participants gave themselves a higher percentage of correct marks during the self-evaluation when using the self-observation form. However, in the written self-critiques, participants supplied more disapproval than approval remarks and provided few amounts of self-instructional comments.

- An examination of piano skill development and self-assessment showed music students felt least competent in their sight-reading and musicality skills at the beginning of the investigation. In the posttest, there was a high degree of correlation (.90) identified between self-assessment and the

posttest perceptions of "knowing" piano knowledge. The participants'

increased knowledge and value became more closely related following

instruction of specific strategies and self-assessment procedures.

Summary on Preservice Music Instruction. The current literature review yielded

113 studies that focused on the learning process of undergraduates, music coursework,

the use of technology, diversity, design of lesson plans, development of aural skills, and

teaching strategies for instruction of MTE undergraduates. Analysis of the studies

demonstrated preservice teachers benefit from authentic context experiences, academic

GPA shared a relationship with academic performance, technology was not utilized to its

fullest, immersion in various cultures improved comfort and awareness levels, and

reflection and feedback enhanced preservice teachers' lesson planning.

Research relating to MTE programs (ensembles, juries, lessons, etc.)

Ensembles

- College musicians demonstrated a higher degree of off-task behavior

  during instructional periods (77%) of a rehearsal than during a

  performance period (23%).

Jury Evaluations and Performances

- Researchers designed the *Multidimensional Assessment Rubric* (MAR) to

  evaluate the possibility of an assessment rubric for undergraduate

  instrumental and vocal student jury performances. Analysis indicated

  moderate to high interjudge reliability across the dimensions of

  participants' performances. Subsequent analysis via an ANOVA indicated

  scores on the rubric related significantly to a students' year in school,

whereas the letter grades subsequently applied by jury panels did not relate to the year in school.

Perspectives on Teaching Private Lessons

- An investigation into the perceptions and attitudes of undergraduate music majors towards teaching private lessons showed that participants felt positive about teaching private lessons. They viewed private lessons as positive to developing their own skills as both performers and teachers. The performers strongly agreed that training is a necessity to be a good teacher and rejected the idea that a good performer is always a good teacher.

Recital Attendance

- Mandatory recital attendance did not appear to have value to undergraduate participants. Participants enjoyed attending the recitals, but the means for the value of the recital requirement itself were lower.

Vocal Hygiene

- Forty-eight percent of the participants believed that the teaching profession is at a high risk for voice disorders, while 46% believed it is a moderate risk.

- When comparing the responses of instrumental preservice teachers to vocal preservice teachers, instrumentalist rated "demonstration signing (alone)" and "demonstration singing, with students also signing" as being more vocal stress than did vocal majors.

- The behaviors of speaking in noisy environments, and clearing the throat, received unhealthier ratings from experienced teachers. Preservice teachers rated vocal warm up healthier than experienced teachers.

Summary of research relating to MTE programs (ensembles, juries, lessons, etc.). Results of the current survey of literature yielded seven studies not specific to the categories above but related to components of MTE programs. These studies examined ensemble rehearsals, jury evaluations/performances, perspectives of teaching private lessons, mandatory recital attendance, and vocal hygiene. College musicians demonstrated a higher degree of off-task behavior during instruction when compared to performance, a rubric for juries demonstrated high interjudge reliability, undergraduates enjoyed attending recitals but did not value it as a requirement, and vocal stress appeared as a concern for both instrumental and vocal music education majors.

Appendix G: Outside Reviewer Instructions for Database Search

Please read the following instructions completely before conducting any searches. If you have any questions or need clarification, please do not hesitate to contact me.

<u>Preparation:</u>

1. Please print these instructions, the *Online Database Search Hits Results Form*, and the *Outside Reviewer Secondary Screening Form*, and the *Search Tabulation Form*.

2. Please read the abstract below:

    Recent research in the United States has explored the facets involved with music teacher education (MTE) including: coursework, skill sets, construction of undergraduate programs, and the development of music teacher identity. Synthesizing this research will assist those responsible for educating future music teacher educators with developing meaningful teacher training programs. The purpose of the current project is to synthesize peer-review research relating to MTE and to recount the findings and connections of existing research. To further explore the interpretations of the study's findings, a questionnaire was administered to experts (N=5) in the field of music teacher education and education for their agreement and opinions of the findings. The responses from each questionnaire were reviewed and categorized. The results were then summarized and reported as part of the research project with the intent to identify commonalities, possible concerns, or future research endeavors specific to music teacher education. Replies are published as part of the study; however, the expert's identity will remain confidential. The results may be beneficial to not only pre-service teachers, but to future primary research endeavors by providing an overview of extant research and the identification of future research needs.

3. Please review the following research questions:

    1. What subject matter themes emerged from examination of Music Teacher Education peer-review journals between January 1982 and July 2010?
        a. Are these themes related in any coherent matter? If so, how?
        b. Are these themes organized in a coherent matter? If so, how?
        c. Are any new emergent ideas present?
    2. What findings have researchers established concerning MTE?
    3. What are the positions of experienced music teacher educators on the findings of the current study?
    4. Please review the below inclusion criteria list (the criteria is also provided on the screening form for your reference). All four (4) criteria must be met to be considered for further review:

     a. relevant to the proposed research questions under consideration
     b. published in a peer-review journal
     c. printed in English
     d. published between 1982 and July 2010

4. Search terms to be employed in database search:

Music + Teacher + Education

Teacher + Preparation + Music

Teacher + Training + Music

Preservice + Music + Education

Preservice + Music + Training

Music + Undergraduate + Teaching

Music + Undergraduate +Training

Music + Undergraduate + Education

Music + Educator + Training

Music + Educator + Preparation

Music + Educator + Undergraduate

Objectives:

You have two main tasks.
     a. To identify the initial number of search hits for each combination of
search terms listed in number 5 on the previous page. DO NOT use any
additional search terms. Please record the number of hits for each set of
search terms within each database on the *Outside Reviewer Online
Database Search Hits Results Form*.
     b. To identify twenty (20) studies that meets the inclusion criteria and ought
to be considered for further review and record them on the *Outside
Reviewer Tabulation Form*. Your twenty studies should be obtained from
a combination of the databases and search terms.

Be sure you have the following forms available:

 a. *Outside Reviewer Online Database Search Hits Results Form*
 b. *Outside Reviewer Screening Form*
 c. *Outside Reviewer Tabulation Form*

<u>Database Search:</u>

1. For the first task, access either ERIC or Academic Search Premiere. You will be recording the initial hits results for the search terms listed in number 5 on the previous page for each database. Please record accurate results on both the Online Database Search Results form and the Outside Reviewer Tabulation Form specific to the individual database.

2. The instructions below refer to the screen for accessing the databases through EBSCO. If you are not using EBSCO, please let me know.

3. The search:

 When using ***Academic Search Premiere***:

 a. Enter the search terms individually one in each search box. DO NOT change the Boolean Operators. They remain on the default setting of *AND*.
 b. Do not change the dropdown selections next to the search terms you entered. They must remain in the default *SELECT A FIELD (OPTIONAL)*.
 c. Scroll down to below the LIMIT YOUR RESULTS bar.
 d. In the column on the left, check the box next to SCHOLARLY (PEER-REVIEW) JOURNALS. Leave all other boxes unchecked and dropdowns unchanged in that column.
 e. On the same page, in the right column limit the PUBLISHED DATE FROM "JANUARY 1982" to "JULY 2010." Leave all other boxes unchecked and dropdowns unchanged in that column.
 f. Select search.
 g. When the initial results appear, please write the total number of hits for the keywords you employed on the *Outside Reviewer Online Database Search Hits Results Form*. Be sure you are identifying the number of hits under the correct database column.
 h. Return to the top of the page and select *CLEAR*. This will allow you to maintain the limiters as you begin a new search using the new search terms.
 i. Repeat steps A and B, verify the limiters have not changed and select search.
 j. Continue until you have initial hit results for each of the eleven (11) search terms and have completed the *Outside Reviewer Online Database Search Hits Results Form* for Academic Search Premiere.
 k. Proceed to the Review of Studies section below.

When using ***ERIC***:

    a. Enter the search terms individually one in each search box. DO NOT change the Boolean Operators. They remain on the default setting of *AND*.

    b. Do not change the dropdown selections next to the search terms you entered. They must remain in the default *SELECT A FIELD (OPTIONAL)*.

    c. Scroll down below the LIMIT YOUR RESULTS bar.

    d. Check the box next to *PEER-REVIEW* limiter.

    e. Immediately below that limiter, change the *DATE PUBLISHED FROM* "JANUARY 1982" to "JULY 2010." Leave all other boxes and dropdowns unchanged.

    f. Select search.

    g. When the initial results appear, please notate the number of hits for the keywords you employed on the *Outside Reviewer Online Database Search Hits Results Form*. Be sure you are identifying the number of hits under the correct database column.

    h. Return to the top of the page and select *CLEAR*. This will allow you to maintain the limiter as you begin a new search using the new search terms.

    i. Repeat steps A and B, verify the limiters have not changed and select search.

    j. When the initial results appear, please notate the number of hits on the *Outside Reviewer Online Database Search Hits Results Form* for the keywords you employed. Be sure you are identifying the number of hits under the correct database column.

    k. Continue until you have initial hit results for each of the eleven (11) search terms and have completed the *Outside Reviewer Online Database Search Hits Results Form* for ERIC.

    l. Proceed to the Review of Studies section below.

<u>Review of Studies:</u>

1. For the second task, return to either ERIC or Academic Search Premiere.
2. Conduct a search (following the same instructions as before) by selecting one of the search term combinations provided.
3. Select a study for review. It does not need to be found on the first page. In fact, I encourage you to flip between pages. Remember, you only need to provide a total of twenty (20) studies from the various search term combinations. They may be from either database.
4. Read the title and abstract for the study you have chosen.
5. Using the *Outside Reviewer Secondary Screening Form* as a guide, determine if the study:
    a. Meets the four (4) Initial Inclusion Criteria
    b. Answers "Yes" to each of the four (4) Study Specific Questions
    Note: You do not need to complete the *Outside Reviewer Secondary Screening Form*.

6. If the study meets both sets of criteria, provide the database name, search terms, and full citation on the Tabulation Form.
7. Select another study and repeat steps 1—4 until you have a minimum of twenty (20) studies. Please feel free to search for more.

Conclusion of Search:

Please return to me via email the *Outside Reviewers Online Database Search Hits Results Form* and the *Outside Reviewer Tabulation Form.*

Thank you for contributing your time and skills as part of my research!

Appendix H: Outside Reviewer Online Database Search Hits Results

Date of Search	Keywords/Descriptors	Academic Search Premiere		Education Resource Information Center (ERIC)	
			Initial Hits		Initial Hits
	Music +Teacher+Education				
	Teacher+Preparation+Music				
	Teacher + Training + Music				
	Preservice + Music + Education				
	Preservice + Music + Training				
	Music + Undergraduate + Teaching				
	Music + Undergraduate +Training				
	Music + Undergraduate + Education				
	Music + Educator + Training				
	Music + Educator + Preparation				
	Music + Educator + Undergraduate				

Appendix I: Outside Reviewer Tabulation Form

Study Number	Date Retrieved	Database	Search Terms	Full Citation
Example	1/5/11	ERIC or ASP	music + undergraduate+education	Author, I. M. (2010). Study Title. *Journal Title, 1*(1), 1-2.
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