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Observations of Students with Disabilities in Inclusive Music Classrooms and Guidelines for Future Research

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Observations of Students with Disabilities in Inclusive Music Classrooms and Guidelines for Future Research

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Dedication

To the teachers and students who have touched my life, inspiring me to be a better teacher and a life-long student.

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It takes a village to complete any type of large project, including this document. I would like to acknowledge my village. First, I would like to thank my parents for supporting me through all of my education; your daily encouragement has been vital to my success. To my friends and colleagues at the University of Texas Butler School of Music and beyond, thank you for your kind words of reassurance. Elizabeth, I am incredibly grateful to have been invited into your classroom for many months, this project would not be what it is without you or your students. Thanks to my committee for your time and guidance in this dissertation. And, Judith Jellison, I have learned so much from our time together, there are not enough words to thank you for your mentorship.

Observations of Students with Disabilities in Inclusive Music Classrooms and Guidelines for Future Research

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As a result of the Individuals with Disabilities Education Act, most children with disabilities in the US are now educated in schools with their typically developing peers. Although many of these children are in elementary schools (VanWeelden & Whipple, 2014) there is little empirical research that informs educational practice in elementary music classrooms (Jellison & Draper, in press). This dissertation comprises an observational study of the behavior of children with disabilities in inclusive music classrooms and their opportunities to practice their Individual Education Program (IEP) goals, and guidelines for conducting research with children with disabilities in inclusive elementary music classes.

In the observational study I describe the opportunities for nine students with disabilities (Specific Learning Disabilities and/or Speech or Language Impairments) to engage in behaviors related to objectives defined in their IEPs in four inclusive music classrooms in relation to the music activities in which the children participated (e.g., singing, playing instruments) and instructional formats of the class (e.g., whole class,

small groups, pairs). A further goal was to identify students' participation and peer interactions.

Results indicated that music theory and other music knowledge activities provided opportunities for students to engage in behaviors related to their IEP objectives. Opportunities for individual responses (verbal/nonverbal and music) and music performances were rare, but when students responded they were most often accurate. Students were most often on-task, particularly when engaged in music making activities, and they interacted with peers when assigned to work in groups and also when interactions were extemporaneous.

I developed guidelines for future research based on my experiences conducting the study, and I discuss the challenges of identifying schools, classrooms, and participants; obtaining formal consent; developing the methodology (research questions, variables, operational definitions, equipment and materials); analyzing and reporting results; and consulting with school personnel before, during, and following the completion of research.

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Chapter One: Introduction

Most all children with disabilities are now being educated in schools with their typically developing peers. This has not always been the case. Decades ago, children afforded educational opportunities were housed in large institutions, often with hundreds of other adults and children with similar disabilities. They lived away from their homes and families, sometimes in deplorable conditions.

In the early 1900s, the deinstitutionalization movement brought about dramatic changes in the lives of all individuals with disabilities. Although most large institutions closed and many people with disabilities lived in small group residences or with their families in communities, it would be decades more before children would be educated in regular schools.

The desegregation of schools mandated by Brown v. Board of Education (1954) was the catalyst for the passage in 1975 of a federal law requiring students with disabilities to be educated alongside their same-aged typical peers in regular education classrooms to the maximum extent appropriate. The Education of All Handicapped Children Act of 1975 dramatically changed the way children with disabilities are educated. The law has been reauthorized and amended over the years, and is now known as the Individuals with Disabilities Education Improvement Act of 2004, or IDEA 2004.

Among the several major premises that have remained unchanged since its passage in 1975 is the requirement for a Free Appropriate Public Education (FAPE). IDEA mandates that "to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are nondisabled; and special classes, separate schooling, or other removal of children with disabilities from the regular environment occurs only if the

nature of the disability or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily" (IDEA, 2004, §1400.34 CFR 300.a.2.2). Requirements related specifically to curricula were not passed until 1997, when amendments to the Act required "access to the general education curriculum in the regular classroom, to the maximum extent possible" (IDEA, 1997, §1400.C.5.a).

Department of Education reports to Congress on the implementation of the law show that millions of children and teachers are affected by IDEA's requirements. The most current report, the *31st Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act 2009,* reports data through 2009, comparing findings to those in past reports (U.S. Department of Education, 2012).

Extensive statistical data are offered (national aggregate data and state-by-state data) regarding which students are served and how students are served, including statistics with respect to age groups, disability types, race, and settings (separate, resource, regular classroom). A total of 6,007,832 school-aged children, ages 6 to 21, received services under IDEA in 2009, and of those students, 94.7% spent at least some portion of their school day in regular classrooms; and 57.2% spent most of their school day (80% or more) in regular classrooms.

Currently, there are no data published by the Department of Education that specify how many children with disabilities are placed in inclusive music classrooms in schools; however, given the large percentage of children with disabilities who spend most of their school day in general classes, it seems reasonable to assume that music is likely a subject in which children with disabilities are taught together with their typical peers.

Research and anecdotal evidence indicate that music teachers work in inclusive settings at all levels of instruction (Scott, Jellison, Chappel, & Standridge, 2007;

VanWeelden & Whipple, 2014). In a large survey of music teachers, VanWeelden and Whipple (2014) found that all elementary music teachers, and nearly all middle and high school music teachers who were surveyed taught students with disabilities in inclusive classrooms. To date however, little is known of these classrooms, the instruction that is provided, or the quality and level of children's participation and learning.

Extensive statistics are offered by the Department of Education regarding students and students' services, but there are no data showing the quality of the implementation of specific provisions in IDEA, provisions that directly affect instruction. Although access to the general education curriculum is required, are students learning the material presented in regular classrooms, including music classrooms? And although students are required by law to have Individualized Education Programs (IEPs) specifying educational goals and objectives, to what degree are these goals being met in various school environments, including music classrooms?

Many questions concerning students with disabilities' participation and learning in regular classrooms are best answered by research that examines instructional practices. To assist in providing appropriate and effective educational programs, as a result of the latest amendment to IDEA, the law now requires services that are "based on peer-reviewed research, to the extent practical" (IDEA, 2004, §1414 d.A.i.IV).

EVIDENCE-BASED PRACTICES IN INCLUSIVE CLASSROOMS

Evidence-based practices are mandated by two of our current education laws, IDEA (2004) and No Child Left Behind (NCLB, 2001). IDEA requires that IEP documents must include "a statement of the special education and related services and supplementary aids and services, based on peer-reviewed research to the extent practicable, to be provided to the child" (IDEA, 2004, §1400 c.5.f). NCLB similarly

requires teachers to "use effective methods and instructional strategies that are based on scientifically based research that strengthens the core academic program of the school" (NCLB, 2001, §115 c.1.c).

The term "evidence-based" first appeared in the field of medicine in the 1990s and was introduced to address the disconnection between research and practice (Claridge & Fabian, 2005). Evidence-based medicine was formally defined in 1996 as "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" (Sackett et al., 1996, p. 71).

Since 1996, the number of papers with evidence-based medicine as a keyword term in MEDLINE has increased (Claridge & Fabian, 2005). One reason for the myriad articles on the topic may be the 1996 definition later in Sackett et al. (1996), that evidence-based practices are those derived from peer-reviewed, published research. Some research groups and organizations consider a peer-reviewed publication (as stated in IDEA) as only one measure for determining evidence-based practices; many propose additional criteria and some recognize only specific research methodologies, most often experimental research with randomized controlled trials.

Randomized controlled trials (RCTs) remain the gold standard of research in the sciences and are considered the most stringent of research methodologies (Claridge & Fabian, 2005). But other research methodologies have gained currency in the field of education and special education.

Education reformers also recognized a gap between research and practice, and once the requirement for evidence-based practices was introduced into laws, discussions emerged as to how best define scientifically-based research in education and special education (Odom et al., 2005). Odom and colleagues (2005) described two types of groups that worked to define criteria, those that include research synthesis organizations,

such as the What Works Clearinghouse (WWC), and others that include professional organizations such as the Council for Exceptional Children (CEC).

The WWC, an organization within the Institute of Education Services (IES) reviews and makes available online research that focuses on instructional interventions concerning a variety of educational topics (e.g., reading) and student populations (e.g., early childhood, disabilities). The WWC and other similar organizations typically support research that uses randomized controlled trials (RCT); however, recently WWC released criteria for the evaluation of single-case design studies (Kratochwill et al., 2010).

Criteria established by professional organizations are similar to those established by research synthesis organizations (e.g., publication in peer-reviewed journals), although they may differ to reflect practices within particular fields (Odom et al., 2005). Many organizations base decisions on evidence-based practices based on the research methodology. For example, the CEC's primary journal, *Exceptional Children,* released a special edition identifying appropriate research methodologies for defining evidence-based practices, whereas the American Speech-Language-Hearing Association (ASHA) evaluates practices differently in different types of clinical activities (ASHA, 2004).

Discussions of criteria to evaluate research and to identify evidence-based practices continue among professionals in fields such as speech and language therapy, occupational therapy, rehabilitation, and psychology (Horner & Kratochwill, 2012; Malec, 2009; Papadimithou, Magasi, & Frank, 2012; Ratner, 2006). The question of whether instructional practices are evidence-based is dependent on the criteria that are established by organizations representing any number of fields.

EVIDENCE-BASED PRACTICES IN INCLUSIVE MUSIC CLASSROOMS

Current education legislation requires teachers and therapists in all areas, including music education and music therapy, to use evidence-based practices to the extent possible. Although the professional organization for music therapists, The American Music Therapy Association (AMTA), and for music educators, The National Association for Music Education (NAfME), promote research, the term evidence-based practices is not prominent in their publications.

The American Music Therapy Association (AMTA) defines evidence-based music therapy practice as integrating "the best available research, the music therapists' expertise, and the needs, values, and preferences of the individual(s) served" (American Music Therapy Association, 2014, p. 1); however, specific criteria to evaluate the "best" research are not made clear.

After the passage of NCLB, NAfME released a document entitled *Music Education in the Law* (2002) asserting that members should "become aware of the research that meets the specifications of the law and use it, as far as is accurate and appropriate, to justify the education practices in music education" (National Association for Music Eduaction, 2002, p. 1). Like AMTA, NAfME has not set specific criteria to evaluate the "best" research.

What is currently known about evidence-based practices in music education and music therapy for children with and without disabilities in inclusive classrooms? Perhaps surprisingly, 22 published studies have been conducted in inclusive music settings between 1975 to 2013 (Jellison & Draper, in press). Of the 22 studies that were conducted in inclusive school settings (playgrounds, early childhood programs, classrooms) all were conducted in elementary schools (K-6), and only 9 were conducted in music classrooms. Authors of the studies examined interventions using descriptive

and experimental methods. In all of the published research, the interventions were deemed effective in terms of social outcomes.

RATIONALE

Given the paucity of research in inclusive music settings, there is an obvious need to continue to describe students' behaviors and identify evidence-based practices for teachers. This dissertation is designed to contribute to the knowledge base concerning children's behaviors and activities in inclusive music classrooms and to provide guidelines to assist and perhaps encourage more researchers to study the topic using observational methods, methods that provide the flexibility to study any number of variables in inclusive classroom settings.

Variables selected for the observational study came from a thorough review of literature (see Chapter 2) and were selected to provide a broad picture of the participation of students with disabilities. Several have been measured rarely, if at all, in previous research, for example those related to nonmusic IEP goals and music learning and performance (Brown & Jellison, 2012; Duke, 1999; Jellison & Draper, in press). Other variables are prominent in the music education, music therapy, general education and special education literature, variables such as on- and off-task behaviors of students and peer interactions (Duke, 1999; Jellison & Draper, in press; Rohrbeck, Ginsburg-Block, Fantuzzo, & Miller, 2003).

PURPOSE OF THE STUDY AND RESEARCH QUESTIONS

This dissertation comprises an observational study of the behavior of children in inclusive music classrooms and their opportunities to practice their Individual Education Program (IEP) goals, and a systematic framework for conducting research with children with disabilities in elementary music classes. The purpose of the observational study was

to describe the opportunities of nine students with disabilities (Specific Learning Disabilities and/or Speech or Language Impairments) to engage in behaviors related to objectives identified in the IEPs in four inclusive music classrooms in relation to various music activities (e.g., singing, playing instruments) and instructional formats (e.g., whole class, small groups, pairs). Further, to describe their participation and peer-interactions. Participation was defined as: verbal and nonverbal responses related to music and other academic content; individual music performance responses; on- and off-task behaviors; and peer interactions.

This research seeks to answer the following questions:

1. What opportunities are present in activities and instructional formats for children with disabilities to demonstrate IEP objectives?
2. When given the opportunity, how frequently do students answer (verbally or non-verbally) music and other academic content questions that are asked by the teacher?
3. When given the opportunity, how frequently do students perform music individually in class, and what is the quality of their performance?
4. What percentage of time are students on-task, and how does on-task behavior vary among different activities and instructional formats?
5. What percentage of time are students with disabilities engaged in peer interactions, and how do peer interactions vary among different activities and formats?

Given the limited research in this area, I developed as an outgrowth of the observational study a set of guidelines for future researchers conducting observational research in inclusive music classrooms. Although conversations with experienced advisors and colleagues can be informative, and numerous books and journal articles can

guide decisions regarding the process of conducting and even publishing research, there are at present no published descriptions of research protocols that consider the unique aspects of inclusive classroom environments in music.

In this document, following a review of literature related to the observational study (Chapter 2) and a complete report of the study (Chapter 3), I describe my personal experiences in conducting the study (Chapter 4) and conclude with specific guidelines for observational research in inclusive music settings that are based on my experiences (Chapter 5).

LIMITATIONS OF THE STUDY

This research is based on a convenience sample located in an elementary school in Manor, Texas, and the data were collected during three consecutive sessions in the latter part of the school year. Although informative, the findings from this research may not be generalizable to other teachers, classrooms, or children. All of the students with disabilities observed in the study have similar diagnoses: Specific Learning Disabilities and/or Speech Impairments. Although these two disability categories are the most prominent among students with disabilities receiving services under IDEA, the results may not reflect the behavior of students with other types of disabilities.

The guidelines for conducting observational research in inclusive music classrooms were influenced by my past experiences teaching children in inclusive settings and more directly from my experiences conducting the study reported in this document.

Chapter Two: Review of Literature

In this chapter I provide a review of literature that informed my decisions to use an observational methodology, to examine students in elementary inclusive music classrooms, to observe students with specific learning disabilities, and to observe specific behaviors and variables related to classroom activities and instructional formats.

WHY AN OBSERVATIONAL STUDY?

For many years the gold standard for research in the sciences has been randomized controlled trials (RCTs). RCTs are characterized by three features: control groups, randomization, and blind trials, all which allow for objective comparisons of effects between two or more interventions (or therapeutic treatments) and the calculation of the statistical possibility of error (Meldrum, 2000).

The use of RCTs presents challenges for researchers and practitioners working with people with disabilities who want to develop and evaluate treatments to provide the best care possible. In the past, treatments went unexamined since the only methodology to test their effectiveness involved RCTs.

Baer, Wolf, and Risley (1968) developed a research method to address this issue: applied behavior analysis. The term applied behavior analysis is also used to describe specific clinical practices, particularly educational practices for children with autism. Many of the recommendations by Baer, Wolf, and Risley had a major impact on research and clinical practices and are still included in texts on observational research methodologies (e.g., Dinella, 2009; Van Houten & Hall, 2001; Waxman, Tharp, & Hilberg, 2004; Yoder & Symons, 2010).

Baer, Wolf, and Risley (1968) proposed that applied research should examine behaviors that are socially important to individuals in natural social settings. At the time

their article appeared, most all research was conducted in laboratory settings. Their suggestion to investigate behavior in natural social settings was considered cutting-edge. Social, natural environments are complex, and thus it is difficult to isolate the effects of single variables in those environments.

Baer, Wolf, and Risley explained that behavior changes brought about through therapeutic interventions must be durable over time and must generalize across multiple environments. They also noted that the effects should be large enough to be of practical value and should have social validity (Baer et al., 1987).

Applied behavior analysis as conceived originally by Baer, Wolf, and Risley (1968, 1987) is intended to bring about meaningful changes in individuals' lives. To determine whether change is meaningful, numerous observations are conducted across time and in various settings. With the development of applied behavior analysis designs (e.g., single subject designs), systematic observation became the predominant method of data collection, providing researchers with a flexible procedure to measure changes in behavior.

Observational research methodology provides means for collecting data in the complex settings of classrooms, therapeutic environments, and community settings, often using single-subject designs (e.g., Taylor et al., 2005) and case studies (e.g., Lancioni et al., 2013), and have also been used in studies using randomized controlled trials (e.g., Grossman et al., 1997) and in mixed methodology research (e.g., Kasari & Smith, 2013). Observational methodologies also extend to educational and clinical practices (e.g., Booren, Downer, & Vitiello, 2012) where they are used in combination with functional behavioral analysis (e.g., Durand, 1990).

Most all behaviors and events that occur in educational settings can be observed using systematic observation procedures. Examples in inclusive classroom settings are

numerous, and several relate to variables of interest in this project (i.e., peer interactions, on-task). For example, peer interactions among children with and without disabilities are of particular interest to researchers in special education. Systematic observation has been used to measure partner choice (e.g., Hughes et al., 2011), the frequency and/or duration of peer interactions (e.g., Franca, Kerr, Reitz, & Lambert, 1990; Fuchs, Fuchs, Kazdan, & Allen, 1999; Hughes et al., 2011), and to the degree possible, the quality of peer interactions (e.g., Booren et al., 2012; Fuchs et al., 1999; Gillies, 2003). Researchers have observed on- and off-task behavior in relation to teacher feedback (e.g., Duchaine, Jolivetta, & Frederick, 2011), specific pedagogical approaches (e.g., Katz, Mirenda, & Auerback, 2002), as part of the functional analyses of students' behaviors (e.g., Gann, Ferro, Umbreit, & Liaupsin, 2014), and with respect to and in comparisons of students with and without disabilities (e.g., Kemp & Carter, 2006).

Though the primary incentive for Baer, Wolf, and Risley to develop applied behavior analysis was to positively affect the lives of children and adults in institutional settings, their ideas grew to have widespread applications in many fields and proved to be flexible and useful in the development of systematic observation procedures. Many of the elements of systematic observation in special education can be traced to Baer, Wolf, and Risley's early work, work that was completed almost a decade before the passage of the Education of All Handicapped Children Act of 1975. Decades later their ideas are still applied in sophisticated research designs and observation procedures that can be used in studies of children's success in school and throughout their lives as adults.

Observational Research in Inclusive Music Settings

Systematic observation has been used in music therapy and music education research for decades to measure a wide variety of student behaviors including: on- and

off-task behavior (e.g., Forsythe, 1977; Jellison, 2002; Register, 2004; Yarbrough & Price; 1981); peer interactions (e.g., Jellison, Brooks, & Huck, 1984; Kern & Aldridge, 2006); stereotypic behavior (e.g., Carey & Halle, 2002; Kostka, 1993); and music task completion (e.g., Colwell, 1995). It has also served as a useful procedure to measure teacher behaviors (e.g., Madsen & Duke, 1985; Price, 1983; Yarbrough & Price, 1981) and the allocation of teachers' time to classroom activities (e.g., Orman, 2002; Wang & Sogin, 1997).

For many years, observational research has been conducted across grade levels and in a variety of music settings, including general music (e.g., Forsythe, 1977), choir (e.g., Dunn, 1997), band (e.g., Price, 1983), and orchestra (e.g., Colprit, 2000), though few studies have been conducted in inclusive music classrooms, even though it is likely that many music classrooms in research studies conducted after 1975 included children with disabilities.

Between 1975 and 2013, there were only 22 published reports of research in inclusive music classrooms (Jellison & Draper, in press). Eighteen of the 22 studies used systematic observation procedures and most of the variables observed were either individual social behaviors or interactions with other children or adults. Several studies examined peer interactions (Kern, Wolery, & Aldridge, 2007; Kern & Aldridge, 2006; Kern & Wolery, 2001; Colwell, 1995; Humpal, 1991; Gunsberg, 1988; Madsen, Smith, & Feeman, 1988; Jellison et al., 1984; McCarty, McElfresh, & Smith, 1978), and others examined individual social behaviors, such as response time during task transitions (Register & Humpal, 2007), and completing a task sequence (Kern, Wakeford, & Alridge, 2007). Other measures considered on- and off-task behaviors (Register, 2004; Jellison, 2002; Standley & Hughes, 1996; Colwell, 1995; Jellison & Gainer, 1995; Force, 1983), stereotypical behaviors (Kern & Wolery, 2001; Kostka, 1993), or teacher

behaviors (Kern, Wolery & Aldridge, 2007; Kern & Aldridge, 2006; Standley & Hughes, 1996). Only a few of the published studies examined music task performance observed (Kern, Wolery, & Aldridge, 2007; Standley & Hughes, 1996; Jellison & Gainer, 1995; Steele, 1984). All of the research measured behaviors in natural settings including music therapy sessions, inclusive music classrooms, playgrounds, and school buses.

WHY ELEMENTARY CLASSROOMS?

Content analyses of published research have consistently indicated the prevalence of college-aged participants in music education and music therapy research (Draves, Cruse, Mills, & Sweet, 2008; Ebie, 2002; Gilbert, 1979; Kratus, 1992; Yarbrough, 1984). Geringer (2000) suggested that one possibility for this finding is that music research is conducted often by university and college faculty who have easy access to college-age participants. Other than college-aged students, the most prevalent population in studies in music education and inclusive music settings are elementary school students (Ebie, 2002; Jellison & Draper, in press; Yarbrough, 1984).

Few studies have been conducted in inclusive music classrooms, all at the early childhood or elementary levels, and none at the secondary level (Jellison & Draper, in press), a fact that may reflect the demographics of music classrooms at the elementary level. Music is a required subject for most elementary students, including those with disabilities. VanWeelden and Whipple (2014) found that all elementary music teachers surveyed reported having taught students with disabilities. These data suggest that more students with disabilities will be found in elementary music classes than in secondary music classes, making the elementary setting more accessible for inclusive music education research.

WHY HIGH-INCIDENT DISABILITY POPULATIONS?

Content analyses of research with students with disabilities often identify the disability categories of the participants. Jellison (2000) found the most prevalent disability category for participants in music research were those with the label "mental retardation" (laws and policies of organizations have changed the language used in most documents to "intellectual disability"); similarly, Jellison and Draper (in press) identified intellectual and developmental disability as the category most studied in inclusive music settings.

Participants with disabilities in music education and music therapy research are most often those with intellectual disabilities (Brown & Jellison, 2012; Jellison, 2000; Jellison & Draper, in press), yet, of the more than 6 million students who receive services under IDEA, the highest percentage (43.6%) are children with specific learning disabilities, followed by speech or language impairments (19.2%), other health impairments (10.5%), intellectual disabilities (8.3%), and emotional disturbance (7.3%) (U.S. Department of Education, 2012). There is a discrepancy in the proportion of disability populations in the music therapy and education research literature and those who receive services in schools. Across all three of the systematic reviews of children and youth with disabilities in music settings (Brown & Jellison, 2012; Jellison, 2000; Jellison & Draper, in press), only 18 music research studies were identified as having participants with specific learning disabilities.

Jellison and Draper (in press) suggest several possible explanations for the lack of research studies with students from high-incident disability populations as participants, noting most of the published research has been conducted by professionals in the field of music therapy and is published in music therapy journals. Of the 22 studies in inclusive settings identified by Jellison and Draper, 18 appear in music therapy journals; only a few

(3) in the *Journal of Research in Music Education*, and 1 in a special education journal. Additionally, music therapists have few opportunities to work in schools with students who have specific learning disabilities. A workforce survey conducted by AMTA (2013) found that most music therapists work with adult populations (46%), and only 13% work in children's facilities or schools. Since most all students with specific learning disabilities and speech or language impairments are in regular classrooms for more than 80% of their school day (U.S. Department of Education, 2012), they most likely do not receive music therapy services.

There is a need for more research with participants who have a wide range of disabilities, but particularly with participants who have high-incident disabilities (i.e., specific learning disabilities and speech or language impairments). To date, children with disabilities who participate in inclusive music research are most often those who are also served frequently by music therapists (i.e., students with intellectual disabilities), not the majority who are served under IDEA (i.e., students with specific learning disabilities and speech impairments). Given the millions of students served under IDEA and those with high-incident disabilities who are most likely to be in inclusive music education classrooms, there is a need to investigate research questions about this population, how they are functioning, and the level and quality of their participation.

WHY THESE VARIABLES?

Systematic reviews provide valuable information about research variables examined in special education, music education, and music therapy literature, and researchers develop and test operational definitions for variables of interest. In the following sections, I discuss briefly the literature related to the variables I selected for

observation in the study that follows. Specific operational definitions for these variables are provided in the study (see Chapter 3).

Music Activities and Instructional Formats

Classroom environments are complex settings, and within classrooms different activities and contexts may elicit a wide range of behaviors from students. Teachers structure activities and present instruction in multiple ways, with the expectation that their students will navigate these different contexts successfully. The subject matter content for instruction within these various contexts is defined by teachers' music curricula.

The National Association for Music Education (NAfME) defines curricular standards for music teachers. The most recent arts education standards were updated in 2014 (National Coalition for Core Arts Standards, 2014). The earlier standards (NAfME, 1994) and the new Core Arts Standards vary in format, both present essentially the same wide range of music skills and knowledge for students to master at each grade level, K-12.

Skills and knowledge are defined in terms of singing, playing instruments, improvisation, composing/arranging, reading/notating, listening/analyzing, evaluating, music and other subjects, and history/culture. Allotment of time devoted to various music topics in music classrooms has been described in previous research (e.g., Orman, 2000). Instructional activities have also been examined in a number of music education studies. In an analysis of 86 research studies that examined the evaluation of individual and group music instruction, Duke (1999) reported that all used either the instructional session or a specific period of instructional activity as units of analysis. Duke identified allocation of time as a basis of analysis in 15 articles, and noted one consistent finding

regarding student behavior: student attentiveness was related to the nature of the classroom activities (Brendell, 1996; Forsythe, 1977; Madsen & Geringer, 1983; Moore, 1987; Moore & Bonney, 1987; Witt, 1986), and students are most attentive during activities in which they were actively engaged, especially music making activities, and were least attentive during transitions between activities.

Research in special and general education also examines types of activities but is more likely to focus on the format of instruction, specifically how students are grouped for instruction. For example, Kurth and Mastergeorge (2012) compared the amount of time students with autism spent in different instructional formats in math and language arts classes and in the students' special education classes. Whole group instruction occurred more frequently in inclusive classrooms whereas small group and one-on-one instruction occurred more frequently in special education classrooms.

Other studies of instructional formats in general and special education classrooms have focused on the duration of peer engagement (in partners or small groups), and differences in interactions between classes who participate primarily in whole class instruction and those who participate in small groups and partner work (peer assisted learning, or PAL). Originally developed to increase interactions between peers of different ethnicities (e.g., Johnson & Johnson, 1981; Johnson, Johnson, Tiffany, & Zaidman, 1983), small group instructional formats also lead to a wide range of academic and social benefits for students (Ginsburg-Block, Rohrbeck, & Fantuzzo, 2006; Rohrbeck et al., 2003).

Educational research often includes observations of both the type of activity and instructional format as variables. The research in music education settings indicates that students are more likely to be on-task when they are making music than talking or writing about music. Research in general education indicates that students who engage in small

group and partner activities perform better academically than do those who only engage in whole class activities. Given the collective and independent influences of activities and formats on students' behaviors, they can be considered together as a type of contextual organizational unit for the observation of students' behaviors in classroom environments.

IEP Goals

Each student assessed as having a disability is required to have an IEP, "a written statement for each child with a disability that is developed, reviewed, and revised" (IDEA, 2004, §1400.34 CFR 300.22). Among the various required components of an IEP are statements of goals and objectives that are determined by each student's IEP team (e.g., teachers, parents, other professionals) following extensive assessment and evaluations. Goals and objectives are those deemed necessary for a student's success in school and in post-school activities. After goals and objectives are determined by the IEP team, "the IEP of each child with a disability is accessible to each regular education teacher (as well as each special education teacher, related service provider, and other service provider) who is responsible for implementing the IEP" (IDEA, 1997, §300.342.b.2). The mastery of IEP goals is of utmost importance, and accomplishing them requires consideration of the appropriate instructional settings and evaluations of student progress. Where should instruction occur and how can teachers prepare students to transfer newly learned skills and knowledge to new settings?

The most up-to-date report on the implementation of IDEA (U.S. Department of Education, 2012) shows that for the year 2009, over six million students, ages 6 through 21 were served under IDEA. Of those, 94.7% were educated in regular classrooms for at least some portion of the day, and 57.2% were educated inside regular classrooms for at

least 80% of the day (a large majority of these students include those with specific learning disabilities).

There is some controversy surrounding the issue of students' educational placements, and assessments of students' success in inclusive settings have produced mixed results. An early review of publications with school age children (K-12) reports mixed outcomes in academic and social gains for students with disabilities in inclusive settings (Salend & Garrick Duhaney, 1999). A review of literature including research of children with disabilities in inclusive classrooms by Odom, Buysse, and Soukakou (2011) shows that young children with disabilities benefit socially from being in inclusive settings, and they have opportunities to focus on learning developmental and academic skills in those settings.

Benefits were also found in a study of middle school students with specific learning disabilities in inclusive classrooms (Rea, McLaughlin, & Walther-Thomas, 2002). Students earned higher grades, achieved scores that were higher or comparable to those of their typical peers on standardized tests, committed no more behavioral infractions, and attended more days of school than students served in resource programs. The authors noted that one of the observed benefits of the inclusion program was the collaboration between teachers during instruction.

Ongoing collaboration among teachers and therapists is necessary if students are to receive services in inclusive classrooms and their experiences are to result in positive outcomes (Throneburg, Calvert, Sturm, Paramboukas, & Paul, 2000). Currently, related services such as speech therapy, are most often delivered in inclusive classrooms rather than in resource programs, though for many years IEP goals were addressed in special education settings exclusively; now IEP goals are being addressed and measured in inclusive settings.

Although it is likely that music activities can provide opportunities for students to learn and practice skills and knowledge identified in their IEPs, to date no music research has considered IEP goals as variables of interest for systematic study. Considering the importance of the instructional settings for students' learning and progress reaching IEP goals, music classes may offer ideal opportunities for students to practice their IEP goals as they also progress musically. Such opportunities can be measured and inform future research practices in inclusive music classroom.

Music Performance Skills and Knowledge

IDEA (2004) requires students to have "access to the general curriculum in the regular classroom to the maximum extent possible" (IDEA, 2004, §1400, A.5.A), a requirement that includes access to the music curriculum, whether the curriculum is designed independently by a music teacher or whether the curriculum follows standards provided by local, state, or national organizations.

Despite requirements for access to the general curriculum and the decades of literature espousing the positive benefits of a quality music education for children, the musical development of children with disabilities has been all but ignored in the research literature. In the most recent systematic review of research with children with disabilities, Brown and Jellison (2012) found that between 1999 and 2009, only 16% of published research articles included measures of music skills, a decrease from the previous 10 years of research when 68% of the studies measured music skills. When analyzing studies in inclusive music settings, only 32% measured music skills (Jellison & Draper, in press).

To measure music skills, Jellison and Gainer (1995) recorded the frequency of task performance, including music tasks, of one student in both an inclusive music

classroom and group music therapy setting. Colwell (1995) included percentage of time on-task to music tasks and percentage of success in those tasks when recording the behavior of two students in adapted and non-adapted inclusive music education lessons. Earlier, Steele (1984) included music tasks in the assessment and setting of objectives for two students with learning disabilities in one-on-one and group music lessons.

Although music learning is seldom assessed in music therapy and music education research focused on children with disabilities, it seems important to consider more carefully music learning goals, given the requirement in IDEA for access to the general curriculum and the consensus view that music learning is beneficial for all children.

On-Task

The measurement of on- and off-task behaviors has been studied for decades in education research. As mentioned in the previous section, students engaged in small groups or with partners tend to be more on-task than are those engaged in whole class instruction (e.g., Good & Beckerman, 1978; Rohrbeck et al., 2003). Few music studies have examined small group and partner activities in music settings (i.e., Humpal, 1991; Jellison et al., 1984; Madsen et al., 1988).

On-task has been a variable of interest in music education and music therapy research (e.g., Brown & Jellison, 2012; Duke, 1999; Jellison & Draper, in press; Yarbrough, 2002). Forsythe (1977) conducted one of the first studies to examine on-task behavior in music classrooms, finding that elementary students were more on-task during active music making activities than during periods transitions between activities; these results have been replicated in a number of studies (e.g., Brendell, 1996; Madsen & Geringer, 1983; Moore, 1987; Moore & Bonney, 1987; Witt, 1986). Students also report

that music making activities, especially playing instruments, are their favorite parts of music class (Bowles, 1998; Dunn, 1997).

There are many other factors, both within and outside the teacher's control, beyond activity type and instructional format, that may affect students' on-task behavior. For example, teachers can control where students sit and the chairs they sit in; both have been shown to affect on-task behavior. Jellison and Gainer (1995) found that some typical students remained on-task whether seated close to or away from their peers with disabilities, irrespective of the severity of their classmates' disabilities, whereas other typical students could not. Wingrat and Exner (2005) found that 4th-grade students who sat in smaller, appropriately sized desks and chairs were more on-task than when seated in traditional classroom furniture.

Students with disabilities have been identified by their peers, teachers, and through their own self-reports as having social deficits, which can include inattentiveness (Kavale & Forness, 1996). Compared to typical peers, students with specific learning disabilities show significant behavioral deficits, particularly with respect to on- and off-task behavior (Bender & Smith, 1990). The ability to stay on-task is also related to gender; girls are reported to be more on-task than boys (Good & Beckerman, 1978), including those diagnosed with attention deficit disorder (Abikoff et al., 2002). Variations in on-task behavior are also observed in different academic subject areas (e.g., math, reading, science, art, music) (Good & Beckerman, 1978), although these differences may be attributed to factors beyond the subject area such as the type of instruction, instructional format, and task. Recently, post-hoc analyses of on-task behaviors of Head Start students as rated by teachers when administering school-readiness assessments indicated a relationship between on-task behavior and the number of feet (1,000 to 3,000)

a homicide occurred within the 30 days prior to testing; students with a homicide closer to their home were rated more off-task by teachers than their peers (Sharkey et al., 2012).

Students vary in their ability to remain on-task, and although some factors affecting students' ability to remain on-task are outside the control of teachers, others are not. It seems important to continue to examine the on-task behavior of students with disabilities in inclusive music settings, to consider outcomes with respect to typically developing peers, and to observe variations in on-task when students are engaged in a variety of activities and instructional formats.

Peer Interactions

Learning activities in classrooms can be structured using a variety of instructional formats (e.g., individual, whole group, small group, partners). In small group and partner work students are expected to interact and learn from each other, and there is wealth of research in general education and special education literature investigating the social and academic benefits of peer interactions (Bowman-Perrot et al., 2013; Ginsburg-Block et al., 2006; Rohrbeck et al., 2004).

Johnson and Johnson were two of the first researchers to investigate the effects of the cooperative learning experiences in education settings, a type of instruction that structures small heterogeneous groups of students who are assigned particular roles (e.g., recorder, timekeeper) and work to complete a group task. Johnson and Johnson's original research (1981) investigated cross-ethnic interactions during free-time among students who had either participated in cooperative or individualistic learning experiences. Cooperative learning experiences promoted more cross-ethnic interactions. With their colleagues, they continued investigating the effects of cooperative learning experiences in classrooms that included low-achieving minority students and nonminority

students (Johnson et al., 1983). Cooperative learning experiences promoted more interactions between the groups during free time, and the low-achieving minority students increased academic achievement compared to their peers who had individualistic learning experiences.

The pioneering work of Johnson and Johnson led to studies of students with disabilities that examined the effects of structured peer interactions on attitudes and behaviors of students in inclusive settings. Again, structured, small, cooperative groups of students were heterogeneous, consisting primarily of typically developing students and including classmates with disabilities.

Many doubted that individuals in heterogeneous groups would all benefit from peer learning, especially if one student had a disability and the others did not; it was expected that only the student with a disability would benefit. However, there is substantial research to suggest that students with disabilities are effective tutors for each other and when matched with a typically developing peer; both tutors and tutees show gains in academic achievement (e.g., Franca et al., 1990; Fuchs et al., 1999; Menesses & Greshman, 2009; Stevens & Slavin, 1995; Wehby et al., 2003; Xin, 1999). These effects are shown in a variety of academic settings (e.g., reading, math) and with a variety of ages (e.g., early childhood, middle school, high school).

It is interesting to consider whether structuring peer interactions in classrooms lead the students who work together to become friends; however, studies suggest it is only those students with limited friends who benefit socially from structured peer interactions (Dion, Fuchs, & Fuchs, 2005; Fuchs, Fuchs, Mathes, & Martinez, 2002). A frequent measure of social outcomes in peer interaction studies is the How I Feel Toward Others (HIFTO; Agard, Veldman, Kaufman, & Semmel, 1978) measure; this group sociometric measure assesses the social status and attitudes of students in classrooms.

Researchers note that when using HIFTO pre- and post-treatment only those students with low social status (students with disabilities and low-achieving students) ratings improved in their ratings after participating in class-wide peer tutoring. There is also evidence that social outcomes are related to academic outcomes, and that both should be considered when groups of peers work together in groups (Ginsburg-Block et al., 2006).

A meta-analysis examining the effects of structured peer interactions in classrooms indicates that this strategy is effective across participants (Rorhbeck et al., 2003) and regardless of grade level or disability status (Bowman-Perrott et al., 2013). The participants of the studies were analyzed in both meta-analyses; most of the studies most studies included students from low socio-economic status, more than 50% of students in classrooms were identified as minority, and that the majority of the studies were conducted in urban and suburban schools (Ginsburg-Block et al., 2006; Rohrbeck, Ginsburg-Block et al., 2003). Therefore, additional research may be necessary to determine if positive effects are also experienced by students from middle to high socio-economic status, students who are not identified as minorities or who attend rural schools.

Despite the available evidence showing that students who learn in structured peer groups benefit by showing increases in on-task behavior, academic performance, and social behaviors, few studies have examined peer interactions in inclusive music settings. In a case study of a young boy with autism, interactions with his typical peers increased during music activities specifically designed to prompt interactions (Kern & Aldridge, 2006; Kern & Wolery, 2001). In another study in an inclusive early childhood classroom, children with disabilities were chosen more often as partners after participating in music activities designed to foster peer interactions (Humpal, 1991).

Jellison, Brooks, and Huck (1984) provide the only experimental music study in inclusive music classrooms to examine small group structures and peer interactions; typically developing students' attitudes as well as peer interactions between students with and without disabilities were measured. Combining pre-post and multiple baseline designs with four inclusive elementary music classrooms, the researchers examined the effects of structured small groups on attitudes of typical students toward students with disabilities (not identified as classmates) as well as interactions between students with disabilities and their typically developing peers. Several types of interactions were identified and observed systematically during classes and free-time for 12-weeks. Findings indicate that when typical students and students with disabilities interacted with each other in small group activities, typical students' acceptance of students with disabilities increased as did positive peer interactions in class sessions with their classmates with disabilities; generalization of interactions was observed during free time. Also, effects were most positive for classrooms of students who were engaged in small group activities (the intervention) earlier rather than later in the multiple baseline design. The researchers concluded that positive interactions among students were not a result of music classroom experiences and instruction alone, but were influenced by the degree to which classroom music activities were specifically structured for interactions.

There is some evidence that classroom music activities can provide opportunities for positive peer interactions, particularly when small group and partner music activities are structured for those interactions. Given the substantial research evidence showing that students can benefit academically and socially in peer assisted learning activities, especially the more vulnerable students and those with disabilities, peer interaction merits the attention of music researchers.

Peer interactions can be observed as they occur naturally in a variety of music activities, during periods of free-time, and during individual work time when students are encouraged to ask each other for help. These observations can inform future research questions concerning structured peer interactions as interventions to facilitate positive attitudes, academic achievement, and social development among students with and without disabilities in inclusive music settings.

Summary

Given the high percentage of students with disabilities in music classrooms and the limited research describing what takes place in those classrooms, it seems important to collect data that may inform professional practice. Little is known, however, about the types of disabilities of students who are in elementary music classrooms. Even though most students with high-incident disabilities are reported to be in inclusive educational settings for the majority of the school day, music research provides little information about this population.

The following chapter is presented as a self-contained study, including an introduction with a brief review of the literature presented in Chapter 2. The study appears as it would in a journal publication.

Chapter Three: Observations of Children with Disabilities in Four Elementary Music Classrooms

The Education of All Handicapped Children Act of 1975 changed dramatically the ways in which children with disabilities are educated in the United States. This law, reauthorized and amended over the years, is now known as the Individuals with Disabilities Education Improvement Act of 2004, or IDEA 2004. Its major premises have remained intact since 1975.

Among the major premises is the requirement for a Free Appropriate Public Education (FAPE). IDEA mandates that "to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and special classes, separate schooling, or other removal of children with disabilities from the regular environment occurs only when the nature of the disability or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily" (IDEA, 2004, §1400.34 CFR 300.a.2.2). A free appropriate education was mandated in 1975, although requirements related to curricula were not passed until 1997; amendments to the Act required children with disabilities to have "access to the general education curriculum in the regular classroom, to the maximum extent possible" (IDEA, 1997, §1400.C.5.a).

Reports by the U.S. Department of Education show that millions of children are served under IDEA every year. The most recent report (U.S. Department of Education, 2012) shows that over 6,000,000 students ages 6 through 21 were served under IDEA, 94.7% were educated in regular classrooms for at least some portion of the day, and 57.2% were educated inside regular classrooms for at least 80% of the day.

Given the large percentage of children with disabilities who spend most of their school day in general classes, it seems reasonable to assume that music classrooms are inclusive, although little is known about these classrooms, the instruction that is provided, or the quality and level of children's participation and learning. In a large survey of music teachers, VanWeelden and Whipple (2014) found that all of the elementary music teachers who responded taught students with disabilities in inclusive classrooms, but to date, we have little information about what students with disabilities are doing in those classrooms.

Much of what we know about music activities, instruction, and the behavior of students in elementary music classrooms comes from published music research with typically developing students. Studies that examine behaviors of students with disabilities and their typically developing peers in the same settings are rare (Brown & Jellison, 2012; Jellison & Draper, in press).

Music research in inclusive settings provides some guidance for the selection of research variables for further study, although the database is small. There are, however, substantial research bases in music education, music therapy, and special education that can inform the selection of research variables and methodologies appropriate for studies in inclusive classrooms. Some variables are measured infrequently, for instance IEP opportunities and music performance; whereas others are measured frequently, such as on-task behavior and peer interactions.

Inclusive music settings provide opportunities for music learning, but also provide opportunities for students to learn and practice other tasks related to a variety of goals identified in the IEPs (e.g., communication, cooperation). The mastery of IEP goals is of utmost importance for students with disabilities. A major concern for students' acquiring

knowledge and skills of any kind, including those identified in their IEPs, concerns the appropriateness of the instructional settings in which children learn

Many students with disabilities spend the majority of their day in general classes, although the results concerning their success in inclusive settings are mixed (Odom et al., 2011; Salend & Garrick Duhaney, 1999). Research suggests that if students are to receive services in inclusive classrooms, collaborations between therapists and teachers are beneficial for positive outcomes (Throneburg et al., 2000). Although it is likely that music activities can provide opportunities for students to learn and practice skills and knowledge identified in their IEPs, to date no music research has assessed students' accomplishment of IEP goals in inclusive music classes.

Music education research in elementary classrooms frequently reports behavioral data with respect to music activities such as singing, playing instruments, moving to music, composing, practicing music reading, listening to music, and studying musical form, timbre, contour, instruments, and composers (Bowles, 1998; Forsythe, 1977; Orman, 2002). Many of these activities form the basis of typical elementary general music curricula (NAfME, 2014).

Music activities are of interest to music researchers and provide opportunities to compare students' on- and off-task behaviors in different environments. As reported by several reviews of music education and music therapy research (e.g., Brown & Jellison, 2012; Duke, 1999; Jellison & Draper, in press; Yarbrough, 2002) student attentiveness has been studied for decades. Beginning with a classic study of on- and off-task behaviors in general music activities conducted by Forsythe (1977), findings across numerous studies have consistently shown that elementary school students are more on-task during active music making activities, such as playing instruments and singing, than

they are during periods of transition between activities or when teachers and students are simply talking.

Engaging students in active music making leads to lower off-task behavior and is reported to be elementary students' favorite part of music class, particularly when it comes to playing instruments (Bowles, 1998; Dunn, 1997), but other factors are influential as well. For example, although seating was shown to influence the on-task behavior of typical students in a music classroom (Jellison & Gainer, 1995), some typical students remained on-task when seated close to peers with disabilities, irrespective of the severity of their classmates' disabilities, but other typical students could not. The reasons for the difference in on-task behavior across typical students were unclear.

The nature of students' disabilities may also influence their ability to stay on-task. A meta-analysis of research studies comparing classroom behavior of children with and without learning disabilities indicates that, compared to typical peers, students with learning disabilities often have significant behavioral deficits (Bender & Smith, 1990). Although some factors that influence students' abilities are outside the control of teachers, others are not.

Whole group instruction is shown to occur more frequently in regular classrooms, whereas small group and one-on-one instruction occur more frequently in special education classrooms (Kurth & Mastergeorge, 2012). When students in regular classrooms engage in peer assisted learning (PAL) in small groups or with a partner, they are not only more on-task, but they also benefit academically and socially, particularly those students who are the most vulnerable (Ginsburg-Block et al., 2006). PAL has been studied in regular classrooms with typically developing students, with students with disabilities, and with students who are struggling academically or socially in school (e.g.,

Bowman-Perrott et al., 2013; Ginsburg-Block et al., 2006; Johnson & Johnson, 1981; Waggoner, Chinn, & Anderson, 1995).

A few music studies have examined peer interactions among children with and without disabilities in inclusive school settings. In a case study of a young boy with autism, interactions with his typical peers increased during music activities specifically designed to prompt interactions (Kern & Aldridge, 2006). In another study in an inclusive early childhood classroom, children with disabilities were chosen more often as partners after participating in music activities designed to foster peer interactions (Humpal, 1991).

The only experimental music study to date that has been conducted in inclusive music classrooms, Jellison, Brooks, and Huck (1984) examined the effects of small group activities on students' interactions and attitudes. Using a combination of pre-post and multiple baseline designs with four inclusive elementary music classrooms, the researchers examined the effects of structured small groups on typical children's attitudes toward children with disabilities (not identified as classmates) as well as interactions between children with disabilities and their typically developing classmates. Interactions were observed during classes and during free time during the 12-week study. Findings show that when typical students and students with disabilities interacted with each other in small group activities, typical students' acceptance of children with disabilities increased as did positive peer interactions in class sessions. These effects generalized to interactions during free time. Effects were most positive in classrooms of students who engaged in small group activities (the intervention) early in the project. The researchers concluded that positive interactions among students were not a result of music classroom experiences and instruction alone, but were influenced by the degree to which classroom music activities were specifically structured for interactions.

The purpose of this observational study was to describe the opportunities for students with disabilities to engage in behaviors related to the objectives on their IEPs in inclusive music classrooms in relation to different music activities (e.g., singing, playing instruments) and instructional formats (e.g., whole class, small groups, pairs), and further, to describe their participation and peer-interactions. I defined participation in terms of verbal and nonverbal responses related to music and other academic content, individual music performance responses, on- and off-task behaviors, and peer-interactions when assigned by the teacher.

I posed the following questions:

1. What opportunities are present in activities and instructional formats for children with disabilities to demonstrate IEP objectives?
2. When given the opportunity, how frequently do students answer (verbally or non-verbally) music and other academic content questions that are asked by the teacher?
3. When given the opportunity, how frequently do students perform music individually in class, and what is the quality of their performance?
4. What percentage of time are students on-task, and how does on-task behavior vary among different activities and instructional formats?
5. What percentage of time are students with disabilities engaged in peer interactions, and how do peer interactions vary among different activities and formats?

METHOD

Participants were nine students who were receiving special education services in a single elementary school in central Texas. The nine students, all of whom had IEPs, were

observed in four general music classes, two in 3rd- and two in 4th-grade levels (approximately 14-20 students per class). Six of the students with disabilities were in 3rd-grade and three were in 4th-grade. Classes were selected in collaboration with the classroom music teacher and remained intact throughout the data collection phase of the study.

All of the students with disabilities were assessed as having Specific Learning disabilities and/or Speech or Language Impairments. The students' diagnoses and IEP goals and objectives are presented in Tables 4 and 5 (see Appendix E). Most relate to specific academic tasks (e.g., editing drafts) and specific speech tasks (e.g., produce the /s/ sound at the word and sentence level). After an initial examination of the videos, I determined that accuracy of IEP objectives would not be able to be determined, and the decision was made to observe opportunities to complete tasks included in IEP objectives. To ease measurement, IEP objectives were categorized based on the skills required for tasks to complete class activities. The total number of objectives for each student and the number of objectives selected for observation are presented in Table 1 (see below).

Students with IEPs were fully included into general education classes although some also attended bilingual classes; none attended special education classes. Information regarding related services, other therapies, and the amount of time spent in special education classes were not on the students IEPs.

Table 1

Total number of IEP objectives and total number of IEP objectives selected for observation

	Reading/Writing		Reading/Talking		Math/Science	
Name (Grade)	IEP Objectives	Objectives Observed	IEP Objectives	Objectives Observed	IEP Objectives	Objectives Observed
Cole (3)	6	6	2	2	15	0
James (3)	9	7	11	11	7	0
Martin (3)	9	8	4	2	17	0
Peter (3)	11	11	4	4	2	0
Rick (3)	3	3	0	0	0	0
Ray (3)	5	5	0	0	0	0
Adam (4)	3	3	6	5	9	0
Raul (4)	3	3	4	3	6	0
Kristen (4)	3	3	3	3	4	0
Total	52	49	34	31	60	0

Note. Objectives are presented only for the students selected as final participants (see Data Collection and Analysis)

Participants were selected from among the 567 students enrolled in a suburban elementary school in Manor, Texas. The school is located in a district where, for the 2011-2012 school year, 81% of the families were considered economically disadvantaged and 87% of the students enrolled in the district were minorities; 61% Hispanic, 24% Black, 11% White, and 3% Asian (Manor ISD, 2012).

A large majority (79%) of the school's students were considered at-risk; 79% were nonwhite (79% Hispanic, 17% Black, and 2% White) and over half the students

(53%) were bilingual (Manor ISD, 2012); 94% were eligible for free or reduced lunch programs.

Students were observed in general music classes that met every four school days for 45 minutes. All four of the music classes that were observed were taught by the same general music teacher, although as a matter of practice for this school, students from different academic classes were combined to create sections for music, art, and physical education so that each class contains some children from the gifted and talented class, some children from the bilingual classes (including children who speak Spanish at home as well as English language learners), and some from regular classes.

Prior to beginning the study, I obtained consent from the school's principal and the music teacher (see Appendices A and B). School consent was necessary for the university's Institutional Review Board (IRB) to approve the study (see Appendix C). Written consent forms (see Appendix D) were sent home with students, and returned with parent/guardian signatures granting consent for their children to be video recorded, to have their children's images shown in educational settings, such as conferences, and for me to have access to their children's IEP goals. Students were instructed to return the signed forms even if their parents did not consent to their participation. After obtaining consent, I obtained the IEPs for the students with disabilities from the special education staff at the school. The IEPs were analyzed and coded by goal category.

Two Canon Vixia cameras mounted on tripods were used to record the class sessions. Prior to data collection, different angles were piloted to determine the final positioning for the cameras. The cameras were placed at opposite corners of the room, facing each other. This positioning resulted in a front view that was able to view all of the children while in their regular, assigned seats and a rear view that captured the teacher moving around the perimeter and children who faced in different directions during group

work, instrument playing, or movement activities. These two views also allowed for a small out of camera space in each classroom for children whose parents did not consent to have their children recorded and allowed all four classes to remain intact throughout the videotaping.

Videos were converted to Quicktime files for later analysis. I recorded data using a MacBook Pro computer connected to a LG IPS LED 27" monitor. Data were recorded using *Scribe* (Duke & Stammen, 2011), a computer-based observation program. I observed nine participants during three class sessions (3rd-grade = 35:20 average duration; 4th grade = 31:45 average duration); all students' behaviors could be observed for more than 50% of each session.

I analyzed each of the video recordings in two viewing sessions. Using *Scribe* (Duke & Stammen, 2011) to record the data, I first identified and timed each music activity and instructional format for each class session. I then counted and timed selected behaviors and opportunities for IEP responses as appropriate for each of the nine students with disabilities.

Based on the research literature and my initial observations of the videotapes, I developed categories, sub-categories, and operational definitions for activities, instructional formats, and students' behaviors. Initially, I had defined several subcategories of instructional formats and student behaviors that I did not include in my final observations. I did not include these observation categories in the list below. Also, given the limitations of the audio and video equipment, music performance responses could only be assessed when students responded individually. Verbal responses were recorded when the teacher asked a question to the class or to an individual and a student's response could be clearly observed. Given these parameters, I used the follow categories, sub-categories, and operational definitions in coding the data.

Music Activities (Duration):

- Singing: class and teacher engage in singing a song or engage in the rehearsal of a song (teacher stops students' singing briefly to give feedback).
- Playing Instruments: class and teacher engage in playing instruments or engage in the rehearsal of a song (teacher stops students' playing briefly to give feedback).
- Singing and Playing Instruments: class and teacher engage in singing and playing instruments simultaneously or engage in the rehearsal of a song (teacher stops students' playing and singing briefly to give feedback).
- Music Listening: class and teacher engage in listening to and discussing music.
- Music Theory: class and teacher engage in activities related to music theory (e.g., practicing music reading skills).
- Music Knowledge: class and teacher engage in discussion and activities related to facts about music (e.g., instrument families, origin and language of a piece of music).
- Conducting: class and teacher engage in conducting beat patterns while listening to a recording.

Instructional Format (Duration):

- Whole Class Music Making: class and teacher engage in active music making activities (e.g., singing, instrument playing) or rehearsing.
- Whole Class Talking/Listening: class and teacher engage in music-related discussion and activities, but not making music (e.g., discussion about historical periods, culture, language, listening to a piece of music, reading music related books).
- Whole Class Worksheet: each member of the class engages in the completion of a music-related worksheet.

- Dyad Talking: pairs of students engage in music-related discussion and activities, but not making music.
- Large Group Game: a group of 7 to 10 students engage in a music-related game with the teacher.
- Non-instructional: students engage in activities not directly related to music or music making (e.g., classroom routines, announcements, interruptions).

IEP Goal Opportunities (Duration):

- Reading/Writing: any music activity that includes behaviors related to reading and writing (e.g., reading from a text and writing, writing and revising drafts, correcting use of capitalization and punctuation, and improving writing legibly).
- Reading/Talking: any music activity that includes behaviors related to reading and talking (e.g., answering questions from a text, engaging in discussion about a text, asking questions related to a text, speech and articulation behaviors).
- Math/Science: any music activity that includes behaviors related to math and science (e.g., use operations to solve problems involving whole numbers through 999). (These objectives were not observed in any of the music sessions, but are included since they were operationally defined in the categorizing of IEP goals and objectives.)

Music Verbal and Nonverbal Responses (Frequency):

- Verbal/Nonverbal Correct: teacher asks a question of an individual student or the class and the student responds correctly either verbally or nonverbally (by using a physical gesture).
- Verbal/Nonverbal Approximate: teacher asks a question of an individual student or the class and the student's response is partially correct either verbally or nonverbally (by using a physical gesture).

- Verbal/Nonverbal Incorrect: teacher asks a question of an individual student or the class and the student responds incorrectly either verbally or nonverbally (by using a physical gesture).

Music Performance Responses (Duration):

- Music Correct: an individual student performs a solo musical task and the student responds correctly.
- Music Approximate: an individual student performs a solo musical task and the student's response is partially correct.
- Music Incorrect: an individual student performs a solo musical task and the student responds incorrectly.

On- and Off-Task (Duration):

- Off-task: any behavior other than that required by the teacher-assigned task or activity (based on Shukla, Kennedy, & Cushing, 1999; Umbreit, Lane, & Dejud, 2004).
- On-task: any behavior that is related to a teacher-assigned task or activity. (based on Shukla et al., 1999; Umbreit et al., 2004).

Peer Interaction (Duration):

- Assigned: student with a disability and peers engage in conversation as part of an assigned task or activity (e.g., students are assigned to listen to a piece of music and then talk with a peer or peers about the music).
- Unassigned: student with a disability and peers engage in conversation that is not part of an assigned task or activity (e.g., while working independently, students engage in conversation while completing the assigned task; or student engages in conversation with peers other than assigned partner).

- Off-task Interaction: student with a disability and peers engage in conversation that is not part of an assigned task or activity, and when attention should be directed to the teacher or an assigned task or activity (e.g., students talk with each other while the teacher is giving directions).

Other (Duration):

- Off-camera: student is off-camera and no observation data are collected.

Several videotapes that were not part of the main study were used to train an independent observer; the observer had had previous experiences teaching in special education. Following training on the research variables, the independent observer watched 30% of the total number of class session tapes for purposes of calculating inter-observer agreement. One of the three videos for each child was randomly selected for viewing with the restriction that no class session was watched more than one time, for a total of nine different sessions, one for each child. Interobserver reliability was high with an average of 92% (range 78%-100%) overall, 100% for IEP opportunities, 89% (range 78%-100%) for verbal/nonverbal responses, 100% for music performance responses, 93% (range 81%-100%) for off-task behaviors, and 91% (range 84%-100%) for interactions.

RESULTS

Results for music activities and instructional formats for 3rd- and 4th-grade are presented in Tables 2 and 3, with three sessions for each class section for a total of 6 sessions per grade level and 12 sessions overall. Since each class section covered the same material with slight variations in the teacher's instruction (e.g., both class sections of 3rd-grade included the same activities in Session 1), I decided to report music activities by grade level rather than by class section.

Third-Grade Classes

A total of 247 minutes (approximately four hours) of class instruction was recorded for the six 3rd-grade class sessions, with a range of durations from 33:09 to 44:15 and an average duration of 35:20 per class session. Across all six sessions, music theory activities occurred most frequently (19 occurrences) and for the majority of the instructional time (55%). There were few instances (<5) of singing, playing instruments, or singing and playing instruments.

The instructional format during music theory activities was mostly whole-class (8 occurrences) and dyads (7 occurrences). The teacher used a whole-class format for all the remaining music activities (playing instruments, singing and playing instruments, and singing). During session one, there was one instance of whole class worksheet for each of the two 3rd-grade classes—an activity that lasted approximately 15 minutes for each class section (13% of instructional time). In this particular activity, students were completing a worksheet summarizing a book the teacher read to the class.

Overall, 3rd-grade students spent 63% of their time in activities designed for the whole class and 40% of their time in activities designed for dyads or large groups. It is important to note that during Session 2, large group and dyad activities overlapped (some children were in a large group while others were in dyads), which is why the total percentage of instructional formats exceeds 100%.

Table 2

3rd-grade total time and percentage of class time spent in music activities and instructional formats

	Total Time	Percentage	Average Time	Range of Time
Music Activities				
Singing	00:20	0%	00:03	00:00-00:20
Playing Instruments	27:44	11%	03:58	00:00-15:05
Singing and Playing	42:16	17%	06:02	00:00-21:56
Music Theory	136:48	55%	19:33	00:00-37:34
Instructional Format				
Whole Class				
Music Making	70:19	28%	10:03	00:00-35:24
Music Talk/Listen	52:50	21%	07:33	00:00-19:46
Worksheet	31:51	13%	04:33	00:00-16:51
Large Group Game	48:05	19%	06:52	00:00-27:15
Dyad Music Talk	51:46	21%	07:24	00:00-28:35
Non-instructional	36:50	15%	05:15	03:44-07:30
Total Time Recorded	247:18			

Note. A total of 6 sessions were recorded, 3 for each class section (average duration = 35:20; range = 33:09-44:15).

Table 3

4th-grade total time and percentage of class time spent in music activities and instructional formats

	Total Time	Percentage	Average Time	Range of Time
Music Activities				
Singing	02:28	1%	00:21	00:00-02:28
Playing Instruments	58:40	26%	08:23	00:00-32:16
Singing and Playing	20:16	9%	02:54	00:00-10:10
Music Knowledge	58:24	26%	08:21	00:00-28:35
Music Listening	33:20	15%	04:46	00:00-17:37
Conducting	03:02	1%	00:26	00:00-3:02
Instructional Format				
Whole Class				
Music Making	84:24	38%	12:03	00:00-32:16
Music Talk/Listen	46:40	21%	06:40	00:00-16:46
Worksheet	43:10	19%	06:10	00:00-23:20
Dyad Music Talk	1:57	1%	00:17	00:00-01:33
Non-instructional	46:00	21%	06:36	03:14-12:18
Total Time Recorded	247:18			

Note. A total of 6 sessions were recorded, 3 sessions for each class section (average duration = 31:45; range = 29:30-41:40).

Fourth-Grade Classes

A total of 222 minutes (approximately four hours) of class instruction was recorded for the six 4th-grade class sessions with a range of 29:30 to 41:40 and an average duration of 31:45. Across all six sessions, 4th-grade students spent a majority of class time playing instruments (approximately one hour or 26% of instructional time) and engaging in music knowledge activities (approximately one hour or 26% of instructional time). Less time was spent listening to music (15% of instructional time).

Similar to the 3rd-grade classes, the most common instructional format was whole-class. There was one instance of whole-class worksheet for each class section (approximately 20 minutes each class section or 19% of instructional time) and three brief instances of dyad time (each <1 min), all which occurred during music listening activities. Overall, 4th-grade students spent 78% of their time in activities designed for the whole class and unlike the 3rd-grade classes, very little time (1%) in activities designed for dyads.

Individual Data

Highlights for each of the behavior categories are presented below, first for the six 3rd-grade students with disabilities (three in one class section and three in the other) and then for the three 4th-grade students (two in one class section and one in the other). Examples are presented for individual students and summary statements conclude each section. Observational data for all behavior categories for all students and grade levels are presented in Tables 6–14 (see Appendix F).

IEP Opportunities

IEP opportunities were calculated for each student by recording the frequency and duration of each class activity that included behaviors that were addressed in the

objectives for each student's IEP. I considered only instances of addressing objectives as they were written specifically (e.g., recognize the change in a spoken word when a specified phoneme is added, changed, or removed); I did not consider instances of possible transfer or generalization of objectives to new situations. The types of music activity and instructional format were also noted for each opportunity.

All 3rd-grade students had at least one opportunity to address an IEP goal during two of the three sessions. Only Cole and Peter had opportunities to address both their reading/writing goals and reading/talking goals; Rick and Ray had only reading/talking goals, and both had opportunities to address their goals in at least one session. James and Martin had opportunities to address only their reading/talking goals and none of their reading/writing goals. Not surprisingly, all of these opportunities occurred during literacy-based tasks related to music theory. During Session 1, students listened to a storybook, discussed the key points with a partner, and individually completed a worksheet about the book. During Session 2, students reviewed the key points of the book with a partner before going to centers to practice the concepts presented in the book in either a large-group game or with a partner. Frequencies of total opportunities ranged from two (Rick) to five (Cole) with durations from 1:25 (Rick) to 43:09 (Peter).

Fourth-grade students had only one opportunity each to address their reading/writing IEP goals (all which occurred in Session 1), and no opportunities to address their reading/talking goals. The reading/writing opportunity occurred during an activity when students were prompted to use a book to complete a worksheet. There was a slight difference in the time allotted to complete the worksheet for each class section; Adam and Raul's class section had approximately 20 minutes to complete the reading/writing task and Kristen's class section had approximately 23 minutes to

complete the same task, accounting for the variation in the duration of opportunities for among the students.

Overall, all nine students had opportunities to address at least some of their IEP goals although the number of opportunities varied, as did the duration of total opportunities.

Music Verbal/Nonverbal Responses

Frequencies of music verbal/nonverbal responses were recorded for each student when opportunities for responses were provided by questions from the teacher. Responses were coded as correct, approximate, or incorrect.

All of the 3rd-grade students had opportunities to respond to questions related to music content knowledge in at least two of the three sessions. Four of the six 3rd-grade students had opportunities to respond in all sessions (Cole, James, Rick, and Ray). Some students had more opportunities than others to respond. Opportunities and correct responses are as follows: Cole = 7/6, James = 32/27, Martin = 14/11, Peter = 16/12, Rick = 25/17, Ray = 11/9.

Of the 4th-grade students, only Raul and Kristen had opportunities to respond; Adam was not asked any questions individually in any of the three sessions and did not respond when questions were posed to the entire class. Raul had opportunities to respond during Sessions 2 and 3, and Kristen had opportunities to respond during all three sessions. As with the 3rd-grade students, when Raul and Kristen had opportunities to respond, they were more often correct (Raul = 10/7, Kristen = 17/9).

Overall, when prompted to respond verbally/nonverbally, most all students' responses were more correct than incorrect, although not all students had opportunities to

respond in all sessions, and one of the 4th-grade students did not have opportunities to respond in any of the three class sessions.

Music Performance Responses

Music performance responses were calculated by recording the frequency and duration of solo performances for individual students. The teacher called on three of the 3rd-grade students (Cole, James, and Peter) to perform a solo instrument with the class ensemble during the third session, and although the duration of these performances were short (20 to 35 seconds), all three students performed their solos correctly. Martin, Rick, and Ray were not asked to perform during any of the sessions.

The teacher asked for 4th-grade students to volunteer to play prepared pieces on their recorders; Raul was the only student to volunteer. He played eight times during Session 2 and three times during Session 3. Raul's performances were short (:18 to :56) and they were correct or approximately correct. Adam and Kristen did not volunteer during these sessions.

Few students had opportunities to perform in front of their peers. Five of the nine students did not have opportunities to perform in front of their peers during the observed sessions. For those few students who did, most often their performances were correct or approximately correct.

On- and Off-Task Behavior

After a preliminary viewing of the recordings, I found that there were fewer instances of off-task than on-task behaviors. For efficiency, I decided to analyze the tapes for frequency and duration of off-task for each student.

Percentages of off-task behavior by activity and format were calculated using the total duration of off-task behavior for each activity and format and the total duration for

each activity and format. The percentages of on-task behaviors by activity and format were calculated by subtracting the percentage of time off-task from 100.

Third-Grade Students. For the most part, all of the students were on-task for all instructional activities. Some students were on-task for entire activities; for example, Martin (Session 1: music theory dyad talk and music theory whole class talk), Peter (Session 2: music theory dyad talk), Rick (Session 1: music theory dyad talk and music theory whole class talk; Session 2: music theory dyad talk and music theory whole class talk), and Ray (Session 1: music theory dyad talk; Session 2: singing whole class music making). Also, all students were on-task for at least one short non-instructional activity in at least two of the three sessions. The activities listed above were also very short activities (all less than three minutes).

In considering the percentage of time on-task, two students (James and Ray) were on-task for at least 75% for all instructional activities in all sessions. Peter was the most off-task in Session 1 (32% when completing a worksheet and 40% when reviewing material from a book read aloud by the teacher). Four of the six students had their highest percentage of time off-task (Cole = 40%, James = 23%, Martin = 45%, and Rick = 74%) during activities in Session 2. This session primarily consisted of students in centers, either playing a flash-card game with a partner, or waiting their turn at a game with the teacher in a large-group. However, in session three, when the majority of class time was spent making music, all six students were on-task for at least 80% of all instructional activities; three of the students (James, Martin, and Rick) were on-task for over 90% of all instructional activities.

Even though students were on-task for most of all instructional activities, and even for all of some instructional and non-instructional activities, four of the students had

their highest percentage of time off-task in a session during non-instructional time (James: Session 1 and 3; Martin: Session 2; Rick: Sessions 1, 2, and 3; Ray: Session 1).

When considering the frequency of off-task behavior, there was variation across instructional activities and across students. For example, off-task frequency could be zero for one-activity and then the same student could be off-task very frequently in another activity (e.g., range for Peter = 0-48). Often, when off-task frequency was high, the duration of the activity was long, for instance Peter was off-task 48 times during a 21 minute music making activity, compared to zero times in a 38 second dyad talking activity.

Fourth-Grade Students. Similar to the 3rd-grade students, all three of the 4th-grade students were mostly on-task for all instructional activities; and all three students were on-task for entire activities. Adam was on-task for all of two instructional activities in Session 1 (music knowledge whole-class) and one instructional activity in Session 2 (music listening whole-class). Raul and Kristen were both on-task for all of at least one instructional activity in all three sessions. Kristen was on-task for all instructional and non-instructional activities for all but one instrument playing activity at the end of Session 3. All three students were also on-task for at least one non-instructional activity in at least one of the three sessions.

When examining the percentage of time on-task, Kristen was on-task for over 70% of all instructional activities in all sessions. Adam was off-task for over 60% of two dyad talking activities in Session 2; if these two activities were not considered, Adam was on-task for over 75% of all instructional activities in all three sessions. During Session 1, Raul was off-task for almost 40% of a short (less than one minute) whole-class talking activity; if this activity was not considered he was on-task for more than 80% of all instructional activities in all three sessions.

Similar to the 3rd-grade students, even though 4th-grade students were on-task for most of all instructional activities, and for all of some instructional and non-instructional activities, students had their highest percentage of time off-task in a session during non-instructional time (Raul: Session 2; Kristen: Session 1).

As with the 3rd-grade students, there was variation across instructional activities and across students in the frequency of individual student's off-task behavior. Raul, though mostly on-task when considering the percentage of time of a playing instrument activity, was off-task 71 times; yet, in Session 2, he was off-task only two times during the entire class.

Overall, most of the 3rd- and 4th-grade students were on-task for most all instructional activities in all three sessions. There were differences in the percentage of time and frequency of off-task across instructional activities and across students. Some students were on-task for all of some non-instructional activities; although six of the nine students had their highest percentage of time off-task in a session during non-instructional activities.

Peer Interactions

Peer interactions were observed by calculating the frequency and duration for each type of interaction (assigned, unassigned, off-task) within each activity and format. Highlights for grade levels and individual students are presented below followed by summary statements for the category of peer interaction.

The type, frequency, and duration of peer interactions varied across students; however, there were some overall trends. In the instance of assigned interactions, the teacher created opportunities and included this format in her lesson plan for those particular sessions; when she did not plan for dyad activities, they did not occur. Similar

to instances of unassigned interactions, the teacher allowed, and even encouraged students to seek help and interact with others to complete their tasks.

For 3rd-grade students, the majority of assigned interactions occurred when they were asked to work with peers, and most often when they were assigned to talk with a partner ("dyad talking"). In these types of assigned peer activities, students were asked to discuss what they remembered from the previous class. Some students engaged in brief peer interactions when assigned, and others who may not have engaged in as many interactions when assigned, interacted for longer periods of time when they were allowed to interact spontaneously when completing a task individually.

All of the 3rd-grade students engaged in peer interactions that were unassigned. For most of the students, the majority of these interactions occurred during Session 1 when students were assigned to complete a worksheet individually (Cole = 39; Martin = 21; Peter = 19; Rick = 6) but talked with another classmate. For all students, their longest total time of unassigned peer interactions was during this same activity (Cole = 3:34; James = :22; Martin = 1:03; Peter = 2:49; Rick = :25; Ray = :29).

Ray was the only student who did not talk to his peers when he was supposed to be listening to the teacher in any of the sessions. The majority of off-task peer interactions occurred during the second session when students were assigned to participate in "centers," spending over 10 minutes either in a large group playing a game or in dyads using flash cards. During these interactions, students were talking instead of paying attention to the large group game, or talking about the large group game instead of using flash cards with their partners. It was also during this center time that the durations of unassigned peer interactions were the longest for four students (Cole = :24; James = :19; Martin = 1:17; Peter = :56).

The total number of peer interactions varied across students (Cole = 86; James = 45; Martin = 116; Peter = 76; Rick = 25; Ray = 36). It is important to note that although most of the students did engage in off-task peer interactions, these interactions did not occur during all sessions for all students, and most were brief.

Overall, the 4th-grade students engaged in fewer peer interactions compared to the 3rd-grade students. Similar to the 3rd-grade students, there was variation in the overall number of interactions for each student (Adam = 16; Raul = 7; Kristen = 37). All three 4th-grade students engaged in unassigned peer interactions, and similar to the 3rd-grade students, the majority of these interactions occurred during an activity in the second session when students were assigned to complete worksheets individually.

Adam and Kristen engaged in off-task peer interactions; Raul did not engage in any across the three sessions. Adam engaged in off-task interactions only in session three, once during an activity playing instruments (:05), and twice during non-instructional time (longest = :11, average = :07). Kristen engaged in off-task peer interactions during Sessions 1 and 3, both were brief (:09 and :03, respectively).

Overall, the type, frequency, and duration of peer interactions varied both by student and by grade level. Many of the assigned interactions occurred during activities when the students were paired to discuss an idea with each other or to practice a skill (3rd-grade). The majority of unassigned interactions for both grade levels occurred during an activity when students were assigned to complete a worksheet individually and were allowed to talk to each other as part of the activity. Across both grade levels, off-task interactions for most, but not all students were infrequent and brief.

DISCUSSION

I studied the behaviors of 9 students in 3rd- and 4th-grade music classes (2 class sections per grade level) for a total of 12 class sessions. Knowing from the research that students' behaviors are affected by classroom environments (e.g., Forsythe, 1977; Rohrbeck, Ginsburg-Block, Fantuzzo, & Miller, 2003), I observed behaviors in a variety of instructional activities and formats. Several positive results came from my observations with respect to students' opportunities to address IEP objectives and their overall classroom participation.

Since no music research to date has approached the issue of IEPs in the classroom, findings from this study suggest that it is possible for students to practice their IEP goals in music settings; though it may be beneficial for music teachers to work in collaboration with other school staff (e.g., Clark & Breman, 2009; Darrow, 1999; Throneburg, Calvert, Sturm, Paramboukas, & Peter, 2000) to develop appropriate activities and adaptations as needed. Many goals are appropriate for students with and without disabilities (e.g., communication goals), and teachers who have access to IEP goals and collaborate with special educators will likely be more successful in developing meaningful music activities that not only incorporate IEP goals, but that are also appropriate for typical students as well.

As stated previously, all of the students in this study had specific learning disabilities and/or speech or language impairments; their IEP goals and objectives reflected these disabilities. None had behavior plans. As a result, although not planned by the teacher, the activities that allowed students to address IEP objectives in music were academically-based (in this case, related to literacy objectives). Literacy-based music activities reflect this teacher's interest in children's literature. She has a large personal library of children's books, many relate to music, and she uses these books to

create interesting lessons; she will read to her students or have them read independently and complete written worksheet.

Many of the IEP opportunities for students in this study were directly related to activities that included books; these opportunities may not exist for students in inclusive music classrooms where books are not prominent in instructional activities. Although it was a coincidence that the teacher's interest (book-based activities) led to IEP opportunities, this finding highlights the close relationships that can be found between students' IEP objectives (behaviors) and their behaviors in activities. The finding also highlights the importance of informing teachers of students' IEP objectives that they may plan appropriate activities *a priori* and implement them more strategically.

Although the music teacher is responsible for the development of the music curriculum with appropriate music objectives and activities, the teacher will also benefit from collaboration with the IEP team, special educators, music therapists, and other staff working with the student (Darrow, 1999). Together they can create opportunities for students to learn, practice, and generalize skills and knowledge identified in their IEPs.

Although in this study the teacher's curricular values and interest influenced greatly the frequency of students' opportunities to address IEP objectives in instructional activities, the nature of the students' disabilities and subsequently their IEP objectives also influenced outcomes. Future research with students with different types of disabilities (e.g., severe disabilities) and who have different types of IEP objectives (e.g., those related to behavior problems) may find different outcomes. However, given results from this study and the breadth of elementary music activities that can engage students socially, emotionally, physically, and academically, it is likely that, irrespective of the nature of severity of students' disabilities, music teachers can create activities where students can learn practice a variety of IEP goals. Future research can examine any

number of questions related to IEPs, questions not only concerning opportunities to address IEP goals, but also students' overall success practicing IEP goals in new situations. This area of research is particularly promising for special educators who are interested in creating opportunities for their students to generalize newly learned behaviors and for music educators who are interested in providing opportunities for all of their students to participate successfully in music classrooms.

Since research reviews show that music learning of students with disabilities is measured infrequently, I developed a few measures for this study, although clearly more should be examined in future research. One measure related to academic learning but was limited to individual verbal/nonverbal responses (most often correct) to the teacher's questions about music. And, although some measure of music performance was possible, it was limited to situations when students were asked or volunteered to perform music individually (most often correctly). Five of the nine students did not have opportunities to perform in front of their peers during the observed sessions. Music performance was measured only individually because of the difficultly I encountered when trying to hear individual responses of students in whole class performance situations; other procedures and equipment are necessary to measure individual learning stringently and in all types of instructional formats—individual, partners, small groups, whole class. Results raise the important point that students' opportunities to know and show what they can do are most often controlled by the teacher.

Regarding on-task behaviors, the students in this study were on-task for the most part during various music activities; although some research (i.e., Bender & Smith, 1990) suggests that students with learning disabilities are identified as having social deficits in classrooms, including significant deficits in on-task behavior compared to their typical peers. Additionally, although teachers often identify students with disabilities as being

mostly off-task in classroom environments (Bender & Smith, 1990), results of the current study indicate that students with disabilities are mostly on-task during music instructional activities, thus helping to dispel any notion that students with disabilities are "always" off-task.

Previous music research suggests that typical students are more on-task when actively engaged in music activities as compared to non-instructional time, or times when students were expected to listen to teacher talk (e.g., Forsythe, 1977; Yarbrough & Price, 1981). Likewise, students with disabilities in this study were mostly on-task during instructional activities, and many had their highest percentage of time off-task in a session during non-instructional activities. Given that high incident disability populations are understudied in the music research literature (Brown & Jellison, 2012; Jellison & Draper, in press), results from this study provide a glimpse of what may be possible for high incident disability populations in inclusive music classrooms. Future research may find more similarities than differences among typical students, students with specific learning disabilities, and students with speech or language impairments, particularly their on-task behavior in preferred music activities and instructional formats.

Participation in this study also included assigned interactions with peers. Similar to IEP opportunities and music responses, the teacher created opportunities for peer interactions; she provided opportunities for students to engage in structured, and to some extent, unstructured peer interactions. The teacher planned activities that included assignments to talk in pairs about the instructional content and even encouraged students to seek help from one another when completing a worksheet individually. Some teachers discourage interactions when students work independently, reminding students to "do your own work." The majority of interactions for students at both grade levels in this

study were unassigned; if this teacher had structured the activities differently, these positive interactions may not have occurred.

All of the assigned interactions in these class sessions included talking; none included music making tasks. Some of the students were off-task for large portions of dyad talking activities suggesting the importance of continuing to examine peer interactions that include a variety of tasks. Given that research has identified ways to structure peer interactions successfully, for social and academic benefits (e.g., Ginsburg-Block, Rohrbeck, & Fantuzzo, 2006; Rohrbeck, Ginsburg-Block, Fantuzzo, & Miller, 2003), music researchers can provide valuable information for teaching practices by studying ways these elements can be incorporated into music classroom activities.

Overall, the nine students observed in these inclusive music classrooms were most often on-task as they participated and interacted in music activities with their typical peers. Given these behaviors, it is quite likely that many outside observers would see these students with disabilities as indistinguishable from their typical peers; all were participating and appeared to enjoy the music classroom experience. What remains to be answered by future research, however, are important questions concerning the music learning of students with disabilities in inclusive music classrooms and ways music classes can provide opportunities for students to learn important nonmusic skills and knowledge identified in IEPs. Ultimately, our goal as music educators is to provide the highest quality of educational experiences to the millions of children in inclusive music classrooms; as researchers, we need to continue to study ways to make this possible.

Chapter Four: Learning from Conducting an Observational Study

Throughout the process of conducting the observational study presented in Chapter Three, I thought often of my experiences, the many decisions and actions that were required to complete the study successfully, how much I had learned in the process, and how I could use my experiences to assist and even encourage other researchers to pursue research in inclusive music settings. Often published research articles are limited to the maximum length specific for journal publications and though published texts can help novice researchers, there are unique aspects to conducting research with children with disabilities in inclusive classrooms. In the spirit of the case study methodology this section includes my documented observations and experiences of conducting the study over a period of time. Sections in this chapter are organized around the process of conducting the study, and all sections include the following three parts: (1) Brief descriptions of the issues of concern (e.g., selecting schools, developing research questions, data collection), (2) Decisions and actions, and (3) Reflections. The brief descriptions of issues are only intended to review some of the issues that were presented in depth in the review of literature (Chapter Two); these issues were considered in making the decisions and actions presented below. Considering lessons learned from the process, I present in Chapter 5 guidelines for researchers who are interested in conducting observational research in inclusive music classrooms.

SCHOOLS, CLASSROOMS, AND PARTICIPANTS

Issues

One of the foremost concerns of many education researchers is finding school settings, schools that will not only allow them to conduct research with children, but in the case of observational research, to videotape the children. There are a number of ways

that researchers have solved this problem. Some universities have laboratory schools; specific schools developed for research and that are operated in collaboration with the university (Glennon et al., 2013). More often, school research occurs where researchers have ongoing positive relationships with school administrators and teachers (Owens & Murphy, 2004).

Guides for conducting school research emphasize the importance of a positive relationship between researchers and administrators, and some recommend steps to develop that relationship, for instance, meeting with the principal in person, emphasizing the importance of the school and teachers' goals over the research, and suggesting ways the school and teachers may benefit from the research (Alibali & Nathan, 2010; Dinella & Ladd, 2009; Owens & Murphy, 2004).

School districts and administrators are skeptical, rightfully so, about research with children as participants. Children, and particularly children with disabilities, are considered vulnerable populations and research with this population may require additional clearances beyond that required by most institutional review boards (IRBs). Most school research must be approved by district IRBs, and if researchers are faculty in higher education, by their respective college or university IRBs (Alibali & Nathan, 2010; Cary, 2009; Esbensen et al., 2008).

The mission of IRBs is primarily to protect the rights of research participants and other parties involved in the research project; IRBs require pertinent information about the schools, classes, and student participants. Following or simultaneously with the identification of school sites, researchers must choose classes and participants, and gather the required information for the IRB. Choosing classes may be based on specific research questions; other researchers may work with school personnel and observe

classes to choose the participants, and then develop research questions that emerge from their observations.

Selecting classes for participants can be difficult depending on the information available to teachers and to researchers prior to obtaining formal parental consent. Children with disabilities may be identified as having an Individualized Education Program (IEP), but their specific diagnosis and goals may be unknown. To make these decisions, again it is recommended that researchers collaborate with principals and teachers (Dinella & Ladd, 2009). When working with classes full of children, it is ideal that all of the children in the class participate in the study, but until formal consent is obtained, the final participants in each class will remain unknown.

Decisions and Actions

When considering schools for this study, one in particular stood out since it had been the site for research by other doctoral students who recommended the school highly, as did my supervisor. It was also helpful that the music teacher was a graduate of our program. This particular school seemed ideal for my project since it had a very diverse student population. I gathered as much information as possible about the students, the school, and the school district online and from the teacher and principal when we met.

Before contacting the principal, I first made contact with the music teacher since the nature of my research would involve her; my interest was to videotape her teaching and her students. At our first meeting, we discussed my research interests, and I gathered as much information as possible about the school population at large and her classes in specific, those that included students with disabilities. The teacher was able to use her class rosters to identify students who had disabilities; however, due to the district's privacy restrictions, she only knew if students had disabilities (not their specific

diagnoses) and the accommodations or modifications that were required for her classroom, curricula, and instruction.

I was unaware of the children's diagnoses until I received formal consent from parents to access their children's IEP documents. Although unaware of specific diagnoses, I wanted to ensure that each class I chose to participate in the study would be inclusive, with adequate numbers of students with disabilities who were not only present in the classroom, but who were also *active* participants. Since my primary goal was to observe students with disabilities in inclusive music classrooms, I asked the teacher to identify classes with more than one student with a disability, ideally 3-4 students with disabilities. This was done to allow for the possibility that not all parents of students with disabilities would give consent for their children to participate in the study.

The teacher explained that unlike other elementary schools where students remain with their home room classes for specials (e.g., art, physical education, music, etc.), this school follows a practice where children from all of the sections of each grade level are assigned to new sections specifically for specials classes. This process allows students from gifted and talented classes, bilingual classes, and general education classes to interact with each other. Additionally, all of the students with disabilities are assigned to classes based on their language background, and are in general education classes for most, if not all of their school day. As a result, students with disabilities are mixed throughout each class section, joining other students from gifted and talented, bilingual, and general education classes. I was fortunate to find classrooms of students representing diverse populations, including several students with disabilities in each class.

The final selection of specific grade levels was influenced by the schedule of classes and the logistics of videotaping. Videotaping full classes of students would be logistically challenging considering the fact that parental consent forms were required for

every child in the class and several class sections would be taped. This school uses a 4-day rotation for the specials classes, and it was important to me to keep the process of videotaping as easy as possible for the teacher, and for me. As a result, the teacher and I decided on two sections each of 3rd- and 4th-grade students as possible participants; they would be taped on the same days (e.g., class section 1 of 3rd- and 4th-grade taped on the same day). I then informally observed these class sections on two occasions; my goal was to ensure the quality of the teacher's instruction and her interactions with students, particularly those with disabilities, and to confirm my decisions about the class selection.

When I observed the four classes sections, I knew from the rosters that I had 11 possible participants with disabilities, but did not know if parents of all would consent or if all diagnoses would be listed on the documents provided to me by the school. Given reports from the U.S. Department of Education showing that a high percentage of students with disabilities who receive services under IDEA are diagnosed with specific learning disabilities, and from my initial observations of the students, I expected a large portion of the 11 students would have specific learning disabilities—expectations that were to be confirmed at a later date after viewing the IEP documents. Although a range of disabilities was not present in each class section, the student population appeared appropriate and given my positive impressions of the teacher's instruction, I decided on all four class sections (two 3rd-grade, two 4th-grade) for the research project. It was now time to meet with the principal.

The principal was known to be supportive of previous research projects and had a positive relationship with the music teacher; he respected and supported her and the school music program she had developed. Their collegial relationship was evident during our meeting, my fifth visit to the school.

I came to our meeting prepared to discuss my research questions and tentative methodology; I explained my purpose, questions, and methodology in clear language. I also came prepared with an understanding of IRB requirements that would pertain to him, specifically for documentation showing his approval of the project. Although he showed interest in my project, his primary concern was whether or not the teacher wanted to participate in this project, and if she thought that this project could be completed successfully at their school. Both expressed interest in the project, relating their understanding of the difficulty of finding schools willing to support research.

The principal's concern was first for the teacher and for the students at his school. After these questions were answered, he then turned his attention to required policies and paperwork that would be needed by my university and particularly my plans to request consent from parents and to accommodate the children of parents who did not give consent. I was prepared with answers for these questions. We ended the meeting with his verbal consent and his agreement to complete the paperwork required for the IRB.

Reflections

The importance of school selection cannot be overemphasized; supportive administrators and teachers are essential to the success of any school research project. Throughout my interactions with the principal and teacher I continued to build positive rapport—easy to do since they were not only competent professionals but nice people as well. Although I initially underestimated the importance of these relationships, I quickly came to value them and understand how these interactions would influence greatly the success of the project.

A positive, ongoing relationship with the teacher was critical to the success of this project since much was required of her, although she willingly offered to do even more

than was required. She helped develop and put into action the logistics of obtaining and tracking student consent forms and operated the cameras during the recording of classes, putting them in storage at the end of each session.

The principal played a key role in a number of issues that arose during the study. One of the most critical points occurred when the district established an IRB committee; only some of my classes were videotaped at the time. The principal informed me that all research proposals now required district IRB approval. Fortunately, the principal talked with the chair of the district IRB committee and committee members requesting that the new requirement be waived since he and the music teacher were strongly supportive of my ongoing research. I had the support of the committee and my project continued.

The principal also took an active role in helping me obtain the necessary IEPs for students who would be participants in the study. He personally introduced me to the special education faculty who, understandably, were protective of the privacy of their students and their parents. However, with parents' consent forms in hand, and the support of the principal and teachers, I was cleared to receive copies of these documents.

Regarding the selection of participants, I had multiple class sections with one to four students with disabilities in each class section of the same grade level resulting in 11 possible participants across four classes sections (seven 3rd-grade students; four 4th-grade students). The decision to select two class sections at each grade level was a good one since we considered the few numbers of students with disabilities in each class section. Also, we decided that the behaviors of the 3rd- and 4th-grade students would be similar, and we could develop one set of behavioral categories and operational definitions that would apply to both grade levels. With two class sections at each level, the processing of tapes would be more efficient.

It was not important to know the students' specific diagnoses at the beginning of the study. Since so little is known about students in inclusive music classrooms, the thought was to gather data for all students who had IEPs, irrespective of their diagnoses. As more research is conducted in inclusive settings, and interventions are being evaluated, it may be necessary to know the students' disabilities, their characteristics and needs, prior to initiating the research.

From my initial observations and in discussions with the teacher about the students' behaviors, I suspected that many would have been assessed as having a specific learning disability; and in fact, after obtaining the IEPs, all were identified as having specific learning disabilities and/or speech or language impairments. Given the lack of research with students with high-incident disabilities as participants, it seemed worthwhile to continue the project and contribute to the music literature with this understudied population.

Overall, although books and individuals can provide wise advise regarding the selection of a school, I cannot emphasize enough the importance of making this decision. Ultimately, the success of observational research in schools is dependent on selecting a school with an appropriate population and a supportive administration, faculty, and staff. It is helpful when principals and teachers have had prior positive experiences with researchers, and given this was the case, it was my responsibility to help maintain these attitudes and build on their positive relationship with my university. Going into a positive, supportive environment was critical at the beginning, but throughout, I continued to build this positive relationship. Day-to-day, I gained increasingly more respect for these professionals who are dedicated to creating positive learning experiences for their students and for supporting and advancing research knowledge. For their personal support, I am deeply grateful.

OBTAINING CONSENT

Issues

After a school setting is chosen, researchers engage in the often lengthy, but necessary process of writing and submitting proposals for approval from review boards for the school district and the researchers' affiliated university. This process, while cumbersome for researchers, is in place to protect the rights and welfare of participants during the research study (Cary, 2009).

Since 1974 with the passage of the National Research Act (1974), all colleges and universities must have an established Institutional Review Board (IRB) that meets federal requirements. There are requirements in place for what they can approve, including special provisions for vulnerable populations. IRBs are charged with the responsibility of weighing the possible results of the study with the possible risks of the study (Cary, 2009). Researchers need to be familiar with the specific documentation that is required to submit to a university's IRB, as there are slight variations in the requirements (Cary, 2009).

Although some school districts and individual schools can vary in their policies and procedures for approval, and some may not have a formal review board in place, most often some type of approval process is required for school research, and approval will require consent from parents and/or guardians before the research project can begin (Alibali & Nathan, 2010; Cary, 2009; Owens & Murphy, 2004).

Many experienced researchers suggest being flexible and patient while obtaining consent since it often takes several weeks from the preparation of the documents and the IRB process to receiving the final decisions from the board (Alibali & Nathan, 2010; Cary, 2009; Esbensen et al., 2008). Some offer strategies to efficiently obtain written consent from parents including sending consent forms home in the mail, attaching forms

to other school forms that require a parent's signature (e.g., report cards), distributing forms at events where parents are likely to attend, recruiting teachers to assist in the collection process, and offering incentives (Esbensen et al., 2008). Other factors can influence parents' decisions to give written approval including the quality of the parent/community relationship with the school and school administrators, and the language and/or complexity of the language used for written consent forms (Owen & Murphy, 2004). In all cases, information needs to be as succinct and clearly written as possible in order to make it accessible to parents/guardians at all literacy levels.

Decisions and Actions

I needed many individuals and institutions need grant approval before I could begin my research. The school district, however, had no IRB when I began my research; my focus, therefore, was directed toward meeting university IRB requirements; gaining the required written consent from the principal, teacher, and parents/guardians for the children's participation, for videotaping, and for access to the children's IEPs.

Gaining written approval from the principal and teacher was a relatively easy process since both had given verbal consent, and the principal had approved of my contacting parents; both signed pre-written consent documents to submit with my proposal application (see Appendices A and B). The process of meeting IRB requirements for the content of the consent forms for the parents/guardians was more complex.

Included in the consent form was a cover letter to parents and guardians, describing briefly the project. Following IRB requirements, attached was the formal consent form with information and a place for three signatures granting consent for their children to participate and be videotaped; for their children's images to be shown on

videos in educational settings (e.g., conference presentations); and for me to access their children's IEP goals (for parents of children with disabilities).

Since many children came from homes where Spanish was the native language, members of the school staff translated the cover letter and form into Spanish. When copied, the form was in English on one side and Spanish on the other, similar to the school's preparation of other printed information for parents. (See Appendix D for the cover letter and parental consent form in English.)

After receiving IRB approval (see Appendix C), the teacher and I made arrangements for the distribution of parent/guardian consent forms. To facilitate the process, the music teacher collaborated with the gym teacher and arranged for the two class sections of each participating grade level to come to the gym during one combined session of gym and music (3rd grade during their specials time; 4th grade during their specials time).

The music teacher explained the study to the large group of students and passed out consent forms. Students were instructed to bring the signed forms back to school and to bring the forms back blank if their parents or guardians did not consent. After the students wrote their names and homeroom teachers at the top of the forms, the forms were collected, sorted by homeroom teacher, and given to the respective teachers to add to the students' folders that would be taken home that week (a weekly routine for the school). Students returned the forms by giving them to either their homeroom teacher (who gave them to the music teacher) or directly to the music teacher who kept a record on a class roster of those who had returned their forms, notating the written decisions of the parents/guardians. Only parents or guardians of one to two students per class section did not give consent for their children's participation.

After two weeks, approximately half of the consent forms were returned; the teacher and I discussed strategies to increase the return rate. In collaboration, the music teacher and classroom teachers agreed that students who returned their forms would earn "points" from their classroom teacher, points that could be used within each classroom teacher's own reward system. Extra copies were given to students who had lost their forms; lines requiring the parents' signature were highlighted.

As an additional prompt for students, for each class section we set up one to two "fake taping" days. During these days, cameras were set up but no recordings were made. The teacher instructed students who had not returned signed forms, even though students said their parents had consented, to sit in an area off the large purple carpet in the classroom, explaining to them that they could not be videotaped since she had not received forms from their parents. All students participated in the same lesson, although some students were seated off the carpet. This strategy was effective; it only took an additional two weeks (four weeks total) to receive all consent forms. At this point, formal taping began.

The parents of all 11 students with IEPs gave written approval for their children to participate and for access to their IEPs. After obtaining written consent forms, I contacted the principal who put me in touch with the director of special education who was made aware of the parents' written consent; she then provided me with copies of all students' IEP goal sheets. I requested access only to pages that identified IEP goals, not access to the entire document since IEPs can be large documents and the sensitivity of some information may have made gaining approval from parents and the IRB more difficult. The narratives on the documents included the students' diagnoses; all were assessed as having Specific Learning Disabilities and/or Speech or Language Impairments.

The students' IEP goals and objectives (see Tables 4 and 5 in Appendix E) were specific to the general education setting (e.g., science, reading, writing, social studies, math); none were specific to contexts outside of the general classroom (e.g., gym, art, music), and none included general behavioral objectives (e.g., behavior plans).

I requested access to IEPs as they were updated; as I received updated IEPs I noted the new IEP documents no longer included the narrative statement with students' diagnoses. When requesting updated IEPs, the director of special education told me one of the students in the project would not continue to receive services under IDEA the following school year; their IEP was therefore going to be discontinued.

Reflections

Receiving consent forms from the parents/guardians of approximately 75 students was no easy feat; the length of the form may have been an issue. The principal expressed this concern although it could not be shorter given IRB requirements.

Since not much could be done about the length of the consent form, the teacher and I worked to develop strategies to prompt students to return their forms as quickly as possible. Among the strategies (classroom rewards, highlighting places for signatures, and fake taping), the most effective was fake taping. After one to two sessions of fake taping, the missing 5 to 10 consent forms were returned within a week. Overall, given the extraordinary coordination among the teachers, the process was completed within four weeks.

Regarding the issue of obtaining IEPs, in hindsight I should have talked with the special education team to find out what information was on each page of their district's documents. Teachers may have given me valuable ideas about ways to request specific information from parents, and what information could be released. Knowing this, I may

have written the consent forms differently, making the task of obtaining information about goals and diagnoses easier.

Initially, although information about diagnoses was not necessary to begin the study, as I developed the report, analyzed and interpreted the results, students' disability diagnoses took on more importance. It was fortuitous that the assessed diagnosis was listed as part of the narrative statement on each student's goal sheet, though that may easily have not been the case had the format of the document been different.

I did not anticipate changes in the document when students' IEPs were updated during the study. Again, a discussion with the special education team directly may have alerted me to this possibility and may have changed what documents I requested in the consent forms. One of the student's classification resulted in the student being moved from services under IDEA (with an IEP) to receiving services under Section 504 of the Rehabilitation Act of 1973 (with a 504 plan). Students with 504 plans continue to need accommodations but they do not (or no longer) meet the criteria for a disability categorical label defined under IDEA that is required for services. This student would not have been included in the study without an IEP. Although I had not considered this a possibility, his change in classification did not affect the analysis or interpretation of the findings since all data were collected under his previous classification.

METHODS

Issues

Observational research has been conducted in classrooms for many decades (Hamre et al., 2009), and systematic observation procedures increased with the development of single-subject designs requiring the measurement of behaviors of individuals across time. The process of developing an effective observational procedure

involves several steps: determining what is important to observe and developing operational definitions as needed; testing measurement techniques; revising definitions and techniques as necessary to arrive at a final decision regarding what is to be observed and how; and finally, developing procedures to gather observational data.

Observational studies begin with decisions about the behaviors of students and their environments. What behaviors and environmental events will be observed and are operational definitions necessary for measurement? Clear operational definitions for each behavior and/or event is critical to the success of observational research since all behaviors and events must not only be observable but must also be measureable. Definitions help determine the most appropriate type of measurement, whether frequencies or durations of behaviors/events are measured. Although the research literature may help guide researchers' decisions about behaviors and operational definitions, it is often during the process of watching students in videos or *in vivo* observations that researchers reach final decisions about behaviors and events for measurement, operational definitions, and even research questions.

Once variables are chosen and some preliminary decisions are made regarding measurement, procedures must be determined for gathering data. For many years observational data were collected using pencil and paper methods by observers in classrooms; however, with the advancement of digital technology, measurement in observational research has changed (Yoder & Symons, 2010). As the use of videotaping gradually replaced live observers in classrooms, researchers began to use other forms of technology, including computer observation software. Technology can be expensive, but videotaping observations provides options for revising behaviors, definitions, and the measurement process as necessary. Today, most data in observational studies are collected using video recordings.

Although published research shows that observers still record observational data from videotapes using pencil and paper methods, computer software for gathering data has advantages. Computer observation software (e.g., *Scribe*, *Observe Prime*) is designed to calculate descriptive statistics for averages, standard deviations, durations, rates, and mean rates for behaviors/events. Also, some observation software is set up to automatically calculate interobserver agreement, comparing two independent observers' data for purposes of reliability.

As researchers are determining variables for observation and observational definitions, they are most likely making decisions about whether frequency and/or duration measurements of behaviors and events are most appropriate, and which will yield the most meaningful information related to their questions. Many types of measurements are described in detail in books on the topic (e.g., Van Houten & Hall, 2001) and can include procedures for behavior counts, check lists, latency recording, momentary time sampling, interval recording (whole, partial), and Placheck, among others. There are advantages and disadvantages of each and final decisions regarding methodology may be reserved until several methods are tested in trial observations.

Irrespective of the type of measurement used, all systematic research methods require a process of conducting and reporting reliability measurements. Reliability, or interobserver agreement, is used to determine the accuracy of the primary observer's data, and is one of the many criteria used by organizations to determine the quality of observational research and thus determining practices that are "evidence-based" (e.g., Horner et al., 2005). Procedures require that, using the same operational definitions and type of measurement, at least one additional (independent) observer watches and measures the same behaviors and/or events in the same way recorded by the primary observer.

Rarely do independent reliability observers watch all videos. Texts recommend randomly sampling approximately 20% of the videos for independent observation, ensuring representation of sessions, classes, events, participants, and other variables of interest (e.g., Horner et al., 2005). Using scores from the primary and independent observer, reliability is derived most often by dividing the number of disagreements by the sum of the total number of agreements and total number of disagreements (Van Houten & Hall, 2001); however, depending on the type of measurement selected, the method of calculation may vary slightly.

Research Questions, Variables, Operational Definitions, and Measurement

The development of research questions, variables, operational definitions, and measurements often evolve together following test trials. After consulting many sources, I selected and drafted a tentative list of variables with subcategories and operational definitions as needed. This was done at the same time I was developing a tentative list of research questions. Initial subcategories and operational definitions were used for test observations during which time I also took copious notes about classroom activities and noted behaviors of specific students that drew my attention (e.g., individual music performance responses). Sample observational measurements were taken to determine the feasibility of the subcategories and operational definitions. As trial measurements were taken, changes were noted and made in all of the variable subcategories and in some operational definitions.

Videos tapes can be viewed multiple times in making the many decisions necessary in observational research, eventually leading to the most appropriate decisions; this process may be unique to observational research. As I watched sample videotapes,

decisions regarding all of these components were refined and then finalized as they appear in the methods section of Chapter Three.

Decisions and Actions

Given the restrictions of the setting, and requirements for studies using experimental designs, group and single-subject experimental designs, the decision was made at the outset to conduct an observational descriptive study. Also, given the scant amount of information we have about students' behaviors in inclusive music settings, a descriptive study could add new information to the limited knowledge base, specifically as it concerns behaviors of children with disabilities in various classroom contexts. What behaviors, however, should be considered and what research questions were important to ask and in what context?

In the process of developing research questions and selecting variables, I sought information from the research literature, specific education articles, people knowledgeable in the field, and also reflected on my past experiences as a music teacher and music therapist. As a music teacher and music therapist, I understood how various types of activities and groupings affect students' behaviors, how some students were more successful in some activities and some groupings than in others. Whatever behaviors I selected for observation, I knew I would observe them within various music activities and instructional formats; to my knowledge a unique approach to collecting data about students' behaviors in music classrooms. Descriptions of students' behaviors in different music activities and in different structures could provide interesting information about several variables: types of activities, group structures, and students' behaviors.

To provide a broad picture of students' behaviors in these contexts, I selected behaviors that were all but absent from the literature (i.e., music responses; behavioral opportunities for IEP objectives) and those that were prominent in the research literature (i.e., on- and off-task; peer interactions). Since on- and off-task and peer interactions appear frequently in the research literature, I had some guidance regarding operational definitions and terminology. Only a few studies measured music responses and no music study considered IEP goals as variables. These would be more difficult to define and measure.

With some adjustments, the literature provided much of the information I needed for developing categories for activities and instructional formats. For music activities, I generated a list from the literature specific to children's music preferences (e.g., Bowles, 1998), behaviors within music activities (e.g., Forsythe, 1977), and teacher activity analyses (e.g., Orman, 2002). The subcategory "music knowledge" was added to describe several activities that related to students' upcoming trip to attend a local symphony concert; examples of activities included discussions of biographical information and language of pieces with lyrics. I eliminated some subcategories (e.g., composition) if no examples occurred on the videos.

Instructional formats were developed from the peer-tutoring literature; I specifically looked at labels for various types of groupings of students (e.g., Johnson & Johnson, 1981; Rohrbeck, Ginsburg-Block, Fantuzzo, & Miller, 2003). Although names and operational definitions came from the literature, as with music activities, I needed to make adjustments in the subcategories. Initially large group was meant to refer to an entire class; however, during one of the class sessions, the teacher split the class into two groups, one group stayed with her to play a game, the other group split into pairs. At this point, whole class as a label was developed, and the operational definition of large group

was changed to account for a group of 7 to 10 students. Small groups were initially a subcategory with operational definitions, but after watching the videos, the teacher did not use groups of three to six students. Also, subcategories included "talking and listening" and "music making" in all formats (e.g., whole class, large group, small group, dyads), but some were eliminated after watching the videos. Whole class worksheet was created to describe when all students were assigned to complete a worksheet individually.

When observing activities and formats, start and stop times for music activities and instructional formats were recorded into *Scribe* files prior to the observation and measurement of individual student's behaviors. IEP opportunities were notated by activities, and matched the activity duration; these were entered manually using the edit feature in *Scribe*.

Although music goals are of primary importance in music classrooms, children with disabilities are working on goals (IEP goals) determined as necessary for their success in school and ultimately their success as adults in post-school environments. From my experiences as a music therapist, I knew the importance of IEP goals to special educators and parents, and wondered if opportunities were likely to occur in specific music activities or instructional formats for students to learn and/or practice objectives identified in their IEPs. Although IEPs are a topic in the special education literature, the idea of observing behaviors identified as IEP goals is unique to research in music education and music therapy. Although ideally, it would be important to record students' actual behaviors, given my resources, for this study I would observe only opportunities for IEP goals to be learned and practiced in various music activities and instructional formats. IEP goals were initially going to be measured for accuracy, but due to the specificity of students' IEP goals and the quality of the recordings, the original

subcategories (correct, approximate, and incorrect) could not be measured. As a result, new subcategories were developed and defined.

Subcategories emerged from the students' IEP goals. Students' had goals relating to reading and writing, reading (or listening to a story) and discussion, clarity and use of speech, math, social studies, and science. After watching the videos, discussing general lesson plans with the teacher, and examining IEP goals once again, I decided to count opportunities for IEP goals related to reading. The subcategory reading/writing was developed and defined as instances when students were reading (or were read to) and required to write; the subcategory reading/talking was developed and defined for instances when students were reading (or were read to) and required to talk with a partner or talk as a member of the whole class. All opportunities were measured using duration recordings.

I selected two additional infrequently measured variables; variables related to curricular goals that may be indicators of students' learning. Given that IDEA requires students with disabilities to have access to the general curriculum, and that few studies in inclusive music classrooms have measured students' academic and music performance (i.e., Force, 1983; Jellison & Gainer, 1995; Steele, 1984), I included questions related to those variables although they would be difficult to observe in a group setting given the limitation of my technology. For these reasons, I developed questions concerning individual responses, verbal/nonverbal responses to the teacher's questions, and individual music performance responses.

Initially, I intended to observe student's verbal responses to determine their levels of accuracy. From observations, however, I saw the teacher prompt students to use nonverbal signals to respond (e.g., "how many quarter notes are in this piece, show me

with your fingers"). As a result the variable and operational definitions were expanded to include both verbal and nonverbal responses.

I was able to observe verbal responses when the teacher asked questions directed to an individual and the entire class, questions that required a verbal response. Often, a student's voice could be heard on the recording among other students' responses; other times, the movement of a student's lips showed whether the student responded, and if so, whether the response was accurate. The subcategories (correct, approximate, and incorrect) did not change with the addition of nonverbal responses; frequencies of verbal/nonverbal responses were measured for these subcategories.

Due to audio and video quality, I could only measure music performance when a specific student was given the opportunity to perform individually. As a result, only solo performances were measured, the operational definition was changed to reflect this decision, but the subcategories (correct, approximate, and incorrect) did not change; duration of music performance was measured for these subcategories.

On- and off-task would be included since it is a prominent variable in the research literature and is interpreted as some measure of students' participation. Research literature guided the drafted definitions for on- and off-task behaviors (e.g., Shukla et al., 1999; Umbreit et al., 2004). Initially the research question and operational definitions were created for on-task behaviors; however, during initial observations I observed that students with disabilities appeared to be more on-task than off-task. To be more efficient, I therefore observed the duration of off-task behaviors. By observing off- instead of on-task behavior, it was possible to do the entire individual behavior recording in one viewing.

The drafted operational definitions of off-task, "any behavior not part of the assigned task," worked for the most part, except when children appeared to be on-task

although engaged in another behavior (e.g., a child who picked her nose for a good part of the lesson, but who otherwise remained on-task). From this initial viewing, the operational definition was changed to consider the attention required for the task or for attending to the teacher. For instance, when a student looks at the clock, the student may be concerned about time and is therefore off-task; however, a student engaged in personal grooming (e.g., hair twisting while watching the teacher) could be on-task. The operational definition was changed to accommodate these ideas and to record the duration of off-task behavior.

Since students would be working with their classmates in different groupings, I would clearly select peer interactions as a variable. Peer interactions initially included two subcategories: assigned and unassigned. As I watched, there were few instances of peer interactions that occurred when students were supposed to be completing a task that did not include interaction (e.g., listening to the teacher give directions). As a result, the subcategory "off-task interactions" was created, and the operational definition of "unassigned" was changed to its final form; durations of peer interactions were measured for these subcategories.

When watching the videos, I noted that some students were off-camera for parts of activities, and their behaviors could not be observed. Some students were out of view for large portions of class sessions. I therefore decided to collect data only for students who were on camera for more than 50% in each of the three sessions. As a result, one 3rd-grade student and one 4th-grade student were not observed, resulting in nine total participants.

Reflections

The process of selecting variables, drafting subcategories and operational definitions, refining research questions, and completing the entire measurement process was a more fluid, dynamic process than I thought it would be. The elements of observational research are intertwined, and required my continuing assessment; I watched certain clips several times to ensure accurate data collection and importantly, to identify, revise, and refine the variables, operational definitions, and research questions.

Approximately 27 hours were necessary to measure the behaviors of the nine students in three sessions each, sessions lasting approximately 40 minutes. An additional 12 hours of observation was required to collect data specific to music activities and instructional formats. Many additional hours were spent watching the tapes to test operational definitions and refine the measurements as stated above. Although the two students who were off-camera for more than 50% of one session were not included in the study, I needed to analyze their videos in order to reach this decision. I understand more deeply why continuous observation of large numbers of students is not conducted more often in education research; observational studies require an inordinate amount of time to gather and analyze data.

Scribe was invaluable for coding and measuring behaviors. I saved time and recorded accurate data by coding all of the classroom data first and copying files; this allowed me to then record data for each individual student. *Scribe* also automatically calculated percentages and averages of the data, facilitating my analysis, interpretation, and reporting of the results (see Analyzing and Reporting of Results).

Many of the students' IEP goals were related to reading and writing, and many of the opportunities in classroom activities and formats were also related to reading and writing. The teacher allowed the students to leave with their writing at the end of each

class period. In hindsight, I should have asked the teacher to show me the students' papers, or I could have scanned/photographed their papers, which would have given me some information about the accuracy of their work with respect to their IEP objectives. Instead, I was only able to report if they had opportunities to address their reading and writing objectives.

Overall, although the literature helped guide some decisions regarding the selection of variables, the process of selecting, revising, and determining meaningful operational definitions was stringent, and critical to the project. Since the process of observing videotapes, measuring individual behaviors, activities and formats, was by far the most time consuming process, to engage in this process without a stringent review and testing of variables would have been foolhardy.

Equipment and Materials

As mentioned above, data collection methods for most observational studies now involves videotaping; observers watch and collect data from videotapes using a variety of measurement techniques and sometimes employing the use of computer software. Since observational data come directly from the videotapes, any number of decisions related to equipment and materials must be made to ensure high quality tapes—decisions that include the type of video equipment, placement of cameras, operation of the cameras, type of software, processing videos for the software program, and the crucial backing up of video files.

Decisions and Actions

Elementary music classrooms are very active environments. From my initial observations in the classroom, I knew that multiple cameras would be necessary to capture the movement and activities of all of the students. The students would move

about during instruction, especially while playing games and interacting in pairs; two cameras would be necessary. My department purchased two Canon Vixia digital cameras for this project, small cameras that had good audio capacity. When purchasing cameras, I looked for cameras with microphone inputs to boost the audio if necessary; this feature was not needed.

The classroom was square with a large rectangular carpet; students engaged in most of their activities on the carpet, except when they moved to an instrument area behind the carpet. The principal and teacher stressed the importance of all students participating in activities without interruption or changes, to the extent possible, and that students whose parents did not give consent would remain in the classroom and participate in activities. This presented a challenge. The teacher and I decided that students without consent would sit just off the carpet in one corner, out of view, although they still could participate in activities and not feel isolated.

Placement of the camera involved several visits to the classrooms to determine the most advantageous position and angle to capture images and sounds of only those students who had parental consent. Cameras would remain stationary to ensure that some of the students were off camera and to limit distractions for the students and the teacher. Also, I would not be present during classes, thus avoiding another possible distraction for students and the teacher. The teacher agreed to set up the cameras and record the class sessions.

I tried multiple angles; it took approximately one week and several visits to set the camera angles correctly. Ultimately, the two cameras were placed in two of the corners of the room with cameras facing each other; the cameras were then set up on tripods for the teacher to operate. Once camera angles were established, sample videos were made

and observed to ensure the quality before and after being uploaded; these sessions were not included in the final analysis.

The teacher played a large role in the day-to-day operations of the cameras by turning the cameras on and off for each class. She agreed to set up the cameras, record all class sessions, and store the cameras. She left the tripods standing, though sometimes they were accidently moved by students or the custodial staff; she wrote down cues using the tiles on the floor to remember the exact camera placement. The cameras were locked in the teachers' desk after their use each day.

SD data cards (4 total) were used to record the videos; each card held up to four class sessions. After four class sessions were recorded, which took approximately one week, I switched out the full SD cards for blank cards after uploading each one into iMovie on an iMac computer and backing up the videos.

It took approximately 30 minutes for each class session video to be uploaded, after which it was exported and saved as a QuickTime file so it could be loaded into *Scribe* at a later time. It took approximately two and a half hours for each class session to be saved as a QuickTime file. After the QuickTime file was saved, a back up DVD of each video was burned, approximately 10 minutes for each DVD. Since there were two videos of each class session (two camera angles), it took approximately six and a half hours to process and backup the video from each class session.

When watching the videos, I saw instances when the students' movements required a combination of videos from both cameras to accurately record their behaviors. For these sessions, the video was edited using iMovie, re-exported as a QuickTime file, and backed up on DVD. The duration of the session was not altered in this process. I used the camera angle that gave me the most information although most often, data could be gathered by using the front camera angle.

All observational measurements were taken using the video observation software, *Scribe* (Duke & Stammen, 2011), which requires importing videos for viewing into the software and entering recording codes for all variables. *Scribe* allows observers to customize the method for measurement, selecting either frequency (called event in *Scribe*) or duration measures. For frequency, behavior/event totals and rates per minute are calculated automatically. For duration, behavior/event frequencies and rates per minute are calculated as well as total time, percentages of time, mean times, and standard deviations of time for behaviors.

Scribe also allows data summaries to be created, separating the data into specific time frames; this was especially useful to gather individual data during specific music activities and instructional formats within class sessions. It also allowed me to be more efficient to gather data for all behaviors of a student in one pass (one viewing of the videotape) with only a few more minutes needed to verify the results and create summaries for the session.

The *Scribe* files could also be copied. Copies were particularly important for the recording of music activities and instructional formats. Files were saved, maintaining all data that were recorded, and then copied to record an individual's behaviors, thus eliminating the need to re-record durations for music activities and instructional formats for each student's *Scribe* file.

With *Scribe*, the video window is adjustable; however, even making the window as large as possible, students' faces could not be seen clearly on a 15" MacBook Pro computer. I used a LG IPS LED 27" monitor to view and code all data.

Reflections

The cameras provided high quality video and sound, sufficient for the purpose of this project; additional microphones were not needed. Through trial and error, the placement of the cameras allowed for a small off-camera area for the one to two students who were not in the study to sit and continue participating in music activities as usual. The final placement also captured the students in a variety of classroom music activities as they moved throughout the room. The teacher reported that the camera placement allowed day-to-day instruction without disruption, and the tripods were rarely moved between class sessions. With assistance from the teacher, the videotaping process including the exchange of SD cards went smoothly. In between visits to the school, I spent a considerable amount of time to process, back up, and edit videos of class sessions, preparing them to import into *Scribe*. Although the processing of tapes could be considered "hands-off" time, it was time consuming and still required my on-going attention.

Reliability

As mentioned above, the measurement of reliability is a required procedure in most observational research. The measurement of reliability includes identifying and training an independent observer on the variables of interest and methods of measurement, selecting representative samples of videos, behaviors, and/or events, and choosing the most appropriate method to calculate interobserver agreement. In the following sections I describe my decisions regarding reliability as reported in the results section of the study presented in Chapter Three.

Decisions and Actions

Typically, 20% of measurements (in this case videos) are used for purposes of calculating reliability (Horner et al., 2005). I used 30%, one of each student's three sessions, nine sessions overall. Each student's video was selected randomly with the restriction that no class sessions was viewed more than once; meaning that for classes with several students with disabilities, the same class session was not watched for each of the students in that class.

Training is recommended for reliability observers, but for this study, I believed it would be an advantage for the reliability observer to have some prior knowledge and training in observing behavior of students with disabilities in inclusive settings. Although the independent observer I selected had prior experience in special education and was a skilled observer of students' behavior, training was required on the specific operational definitions in this study and in the use of the observation software, *Scribe*.

After a discussion of the operational definitions, the observer used *Scribe* to record data using training videos, videos not randomly selected for reliability observations. Considering that I watched the videos multiple times confirming the start and stop times of music activities and instructional formats, I decided that the reliability observer would only observe and code individual student's behaviors.

The reliability observer first practiced observing and coding behaviors in 20-minute segments of the tapes, and the results were compared to the primary observer. Any disagreements were discussed and watched again, continuing until she and I reached 80% agreement for each of the variables we observed independently. Following this training period, which took approximately three hours, she was prepared to collect data for all variables for each student, a process that took approximately nine hours.

Reliability percentages were calculated for each student and each variable using data from the independent observer and data I collected as the primary observer.

Reflections

Although I was working with a reliability observer who is an intelligent teacher with experience observing students, it was difficult for us to achieve 80% reliability for some variables, specifically for off-task and types of peer interactions. Other variables (verbal/nonverbal responses, music performance responses, and IEP opportunities) were between 80% and 100% after the first training tape. Off-task and peer interactions required multiple viewings and discussions to reach 80% agreement.

Some of the observer's experiences as a special educator may have influenced her decisions about off-task behaviors of students; her instinct was to wait until the student was off-task for more than a second or two before recording "off-task." It took several viewing of multiple 20-minute segments before reliability was at an acceptable level for this variable.

Types of peer interactions also presented difficulty in reliability training, mostly due to the camera angle. The observer's instinct was to record interactions if the student was facing off-camera and another student was in partial view as they were facing each other, assuming they were engaged in conversation even if their mouths or other types of "conversation" behaviors could not be observed. These type of errors were also corrected after additional discussion and practice. She correctly began to record these instances as "off-camera."

Reliability procedures, training, and calculations were not difficult, although time consuming for the reliability observer who generously agreed to complete this task. Reliability training requires not only a participant who is willing to offer her time, but

also intelligent discussions, clarifications of operational definitions, and practice as necessary until acceptable levels of reliability are achieved between two independent observers.

ANALYZING AND REPORTING RESULTS

Issues

Observational data collection often results in many data points, especially when multiple participants are included in the study. Texts and researchers suggest recommendations for analyzing and reporting data (e.g., Brantlinger et al., 2005; Horner et al., 2005; Van Houten & Hall, 2001).

First and foremost, the data needs to be sorted and coded in a meaningful way (Brantlinger et al., 2005). Many texts recommend using visual analysis to present and examine data (e.g., Brantlinger et al., 2005; Horner et al., 2005; Van Houten & Hall, 2001). Often, visual analyzes are presented for individual participants, in separate tables and/or separate graphs for each participant showing participants' behavior throughout several observation periods (e.g., Horner et al., 2005; Van Houten & Hall, 2001). Observational research, as discussed in Chapter Two, has its roots in observing the effects of treatments on each individual participant; currently, researchers continue to emphasize each individual's responses (e.g., Horner et al., 2005).

In addition to visually representing results, calculating appropriate statistics including measures of central tendency (e.g., mean) are recommended (e.g., Van Houten & Hall, 2001). The presentation of statistical results and descriptions of calculations and methods to obtain the statistics are often cited as criteria important in the evaluation of observational research as evidence-based practice (Brantlinger et al., 2005).

As with other research methods, results of observational research should be discussed with connections to previous research, and conclusions substantiated by evidence (e.g., Brantlinger et al., 2005; Horner, at al., 2005). Importantly, consistent with the original intent of observational research, results should have practical implications for the lives' of participants (Baer et al., 1968); results should have social validity.

Unlike basic research conducted in laboratory or artificially constructed environments, observational research is often done in natural environments for the sheer purpose of understanding and improving the quality of life for individuals. The results of observational studies report what is actually happening in a specific context, helping researchers learn more about the complex environments people encounter on a daily basis, and the influences these environments may have on the individuals now and possibly throughout their lives.

Often the decisions researchers make regarding the analyzing and reporting of results is not documented and published. The following section includes descriptions of the decisions and actions I made when considering how to analyze and report the data from the study presented in Chapter Three.

Decisions and Actions

First I examined *Scribe* summary files and chronologies. Summaries for duration measures provide total frequency, total duration, average duration, rate per minute of the behavior observed, and standard deviations. Summaries for event measures include total frequency and rate per minute of the behavior. I used chronologies to determine the ranges.

I examined *Scribe* files independent of individual behavior data to analyze music activities and instructional formats. Considering there were only slight variations for the

3rd- and 4th-grade lessons respectively, I re-calculated and presented the results by grade level rather than by each class section. I entered the data into a spreadsheet, and total durations, averages, and standard deviations were calculated for music activities and instructional formats using the *Scribe* chronologies. Chronologies were used to determine the range for each music activity and instructional format. These data are presented in Tables 2 and 3 in Chapter Three.

In keeping with recommendations from researchers regarding observational research, I made the decision to analyze data by individuals. Individual data were calculated similarly, using *Scribe* summaries to identify measures of central tendency and chronologies to identify ranges for each student's behavior. *Scribe* allowed me to create new summaries with custom time frames; a new summary was created for each music activity and instructional format resulting in many summaries for each participant.

After sketching out multiple drafts for tables without entering data, I decided on a final format with each behavior category presented by session and, because content was important to this study, with the music activity and instructional format listed on each line. A draft of one table was examined in this format before others were created for all participants. The final individual tables present the data clearly although they turned out to be quite lengthy (see Tables 6-14 in Appendix F).

In general, I looked for instances of highest and lowest frequencies, ranges, average durations, total durations, and percentages within each activity when appropriate, for each participant both across and within sessions. After these data were examined, I looked for trends across participants and presented them in the results section of the study. I also noted wide variability in the data within and across individuals and therefore decided that additional statistical procedures would not be appropriate.

I felt it was important to report the frequency, range, average duration, and percent of activities of behaviors when possible, though I especially thought this to be the case for off-task behaviors. The frequency of a student's off-task behavior may lead a teacher to perceive that, "this student is *always* off-task;" yet, the range and duration of off-task behavior may show that off-task occurrences are brief. Similarly, frequencies of activities with assigned interactions may be high but duration measures show whether or not students are actually *engaged* with each other for the duration of the activity.

Reflections

The class-wide data analyses were easy to recalculate; the data tables clearly reflect the overall class time spent in activities and formats for each grade level. It was convenient that the class sections could be collapsed, resulting in one table for each grade level of music activities and instructional formats.

The individual data tables were cumbersome to prepare, analyze, and present. The individual data tables (see Tables 6-14 in Appendix F) are lengthy and likely would not be published; but they were incredibly important in the final analysis of each student's behavior. Grouping each behavior together on the table by sessions allowed me to quickly see the wide variations within and across students, especially for on- and off-task behaviors. Also, including the music activity and instructional format on each line allowed me to track trends by activity and format easily. Some graphs were sketched in anticipation of visually presenting the information; however, considering the high variability within and across students and the lack of an intervention, I decided that they were not necessary in the presentation of the data even though visual representation of results are common in observational studies.

Once the results were calculated, the students were observed to be off-task for large percentages of non-instructional time. This result was expected considering previous research in music education classrooms (e.g., Forsythe, 1977) and is discussed in the final study. Now that this information is known, it is probably not productive to record and code behaviors during non-instructional times unless research questions specifically relate to students' behavior during those times. Since context clearly influenced the nature of students' behaviors, in future research, I will use the music activity and instructional format as a unit of measurement.

CONSULTATION

Issues

Applied research, specifically systematic observation, is intended to have a direct impact on practice; this was one of the goals described in writings by Baer, Wolf, and Risley (1968; 1987) in their development of applied behavior analysis. Although these goals are of continuing importance in observational research, there is often a research to practice gap in many fields of study. This gap has been cited as one of the reasons to develop evidence-based practices for multiple fields including medicine, education, and therapies (e.g., Claridge & Faban, 2005; Odom et al., 2005).

The development of evidence-based practice is of such importance in the field of education and special education that current legislation includes the term "evidence-based" regarding instructional strategies for students with and without disabilities (IDEA, 2004; NCLB, 2002). Researchers can help bridge this gap and facilitate the development of evidence-based practices by conveying the results and implications of a completed research study directly to school personnel who have been supportive and active

participants in the experience (e.g., Bellmore & Graham, 2009; McCall & Groark, 2000; Sherrod, 1999; Shonkoff, 2000).

First, decisions need to be made regarding with whom to share information about the study (Bellmore & Graham, 2009). Depending on the study it may be important to share information specifically with school personnel, including teachers, aides, and other support staff interacting with students. In some instances, researchers may consider sharing the results of the study with parents of the participants (Bellmore & Graham, 2009; Sherrod, 1999; Shonkoff, 2000), if not the participants themselves (Sherrod, 1999). District administrators may also be interested in the results of a study, especially if there are implications for public policy (Sherrod, 1999).

Second, in preparing results for presentation and discussion, researchers need to consider the varied areas of interests for different audiences—audiences comprised of teachers and/or administrators (Bellmore & Graham, 2009; Sherrod, 1999). Teachers are likely to be interested in the implications of the study as it concerns their work with students and their curricular goals and daily instruction; however, administrators, particularly principals are likely to be interested if results support implementing a school-wide practice to improve the education of many students (Sherrod, 1999).

Lastly, decisions need to be made regarding how to present the information to audiences successfully, deciding the strategies and methods to best reach a particular audience (Bellmore & Graham, 2009; Sherrod, 1999). Teachers may benefit from an in-service style presentation. Principals and district administrators may prefer a brief meeting. Disseminating information to large numbers of parents may be completed easily with a newsletter.

Additionally, texts regarding research in schools mention benefits for the schools as a result of participating in the project, some administrators may even ask about

potential benefits in the initial planning meeting (e.g., Bellmore & Graham, 2009). Many teachers and administrators who participate in research may feel like shareholders and feel as if they are on the cutting edge of the field of education. Ultimately, sharing results of the study may change the instructional practices of teachers and school-wide policies of administrators, and thus increase the quality of their students' education (McCall & Groark, 2000; Sherrod, 1999).

In considering the results of the study, the interest of the music teacher and principal, and the potential benefits of sharing the results with school personnel, I decided to set up a consultation meeting. The following section documents my planning and initiation for the consultation meeting with the school staff.

Decisions and Actions

When initially approaching the principal and teacher about this study, both expressed interest in learning from study results. Given the nature of the data collected, the teacher thought she would learn how to structure lessons and instruction more effectively for the students with disabilities in her classrooms, even her students with disabilities who were not participants. The principal thought he would learn how to best continue his support for the music teacher and her students with disabilities. In part, it was this discussion that prompted me to consider a meeting with both of them at the conclusion of the study. Unfortunately, only the music teacher was available since the principal was overcommitted to meetings, some of which were classes for his own professional development. The music teacher agreed to share findings with him when the first opportunity arose.

In preparation for the meeting with the teacher, I chose specific highlights to share about each student and all of the students collectively. She had expressed an interest in

developing lesson plans that were more inclusive of her students with disabilities so my goal was to help her do just that. I considered sharing video with her from the study, but ultimately decided that there were not specific instances of student behavior that would facilitate our conversation; though video observation of one's own teaching can be helpful in self-evaluation, this study did not evaluate her teaching. I made notes and copied all of the tables onto an iPad so she and I could examine some of the data together. We discussed data and ideas for students to have greater access to the curricula and for instruction that would lead to their increased participation and success.

Throughout the meeting, since the teacher and I had a very positive relationship, our interactions were also positive and we enjoyed sharing stories about the classes and students as well as looking at numbers. We first reviewed and discussed results of music activities and instructional formats by classes and grade levels. The teacher was surprised to see how her time was allocated, specifically the percentages of time spent on non-music making activities. We discussed the importance of increasing the amount of music making activities in her plans and lessons.

We then moved on to results for each of the nine students as presented in their individual tables, starting with on- and off-task behavior. She was pleasantly surprised by some of the individual results, particularly how frequently most of the students were on-task for many of the instructional activities; she noted the average duration, total duration, and percentage of off-task behavior by activity as well. This response confirmed my suspicion that teachers' may over-estimate the degree of off-task behavior exhibited by their students with disabilities during instruction. We discussed the importance of planning activities including music making experiences, as those activities had low percentages of off-task behavior for all students, even in activities over 20 minutes long.

Regarding peer interactions, she asked me to review the activities in which the interactions occurred and then noted the limited music making experiences in those tasks. We discussed the frequency of off-task interactions in the large group format for the 3rd-grade students and the fact that some students did not interact for the entire duration of an assigned interaction activity. She was not surprised by this, noting that those students are particularly shy, and don't volunteer for tasks or to answer questions regularly. As a possible way to increase the duration of those interactions, we talked about students choosing their partners, perhaps some of the students would be more comfortable discussing a topic or completing a task with a preferred classmate. We also discussed several strategies for increasing music making tasks as part of the students' partner work.

After discussing these variables, the teacher stated that she finds students more off-task towards the end of the school year, and as a result she doesn't plan as many music making activities, worrying that off-task behaviors may increase. She was surprised by the clear implication that it would be beneficial for her and her students to engage in music making experiences more frequently, in every class until and including the last day of school.

We discussed an activity in the second 3rd-grade sessions with high instances of off-task behaviors. This particular activity included students either in a large group playing a game with the teacher or in pairs working on music reading flash cards. When I refreshed the teachers' memory of the activities, she remembered that she felt as though that particular lesson did not go very well, and planned on discontinuing that particular set of activities in the future. She mentioned that she was glad to see the data confirm her instincts.

We then moved on to discussing verbal/nonverbal responses and music performance responses and results across all grade levels and sessions, showing few

opportunities for any of the nine students to respond individually. I did emphasize that when they did have opportunities, they were often correct. The teacher was surprised by how low the frequencies were for the students, but she was not surprised that they were often correct, and noted their progress in music skills throughout the school year. She mentioned that increasing the opportunities for individual responses may also increase students' on-task behaviors since they would be actively participating in conversations and discussions rather than listening only.

Lastly, we discussed the IEP opportunities for students. The teacher was particularly interested in this section of the results since she does not have access to the IEPs for students, only required adaptations. I reviewed how this particular variable was measured and showed her Table 1 (total number of IEP objectives and observed objectives). She was happy to see that even though unplanned, all of the students had opportunities to practice their IEP goals. After a brief discussion of several examples of opportunities for specific goals, she expressed that if she knew all of their goals, she would be able to plan better for these students. Of course I agreed.

We ended the meeting with a discussion of what she could do to obtain copies of the IEP objectives for all of her students with disabilities, how she could talk with the principal and director of special education as necessary to obtain these documents, and how to highlight the benefits for her instruction and ultimately the success of her students. I also recommended that she consider being a member of students' IEP teams, at least for some of her students, where she could learn about the process of developing the IEP document, about IEP goals, and about ways to help students reach IEP goals, including music goals in her classroom.

The teacher thanked me for sharing the results with her. She was highly positive about planning lessons differently, particularly those at the end of the school year and

learn ways to increase on-task behaviors, peer interactions, and individual verbal/nonverbal and music responses. She also plans on making an appointment with the principal and school director of special education to discuss the importance of her receiving copies of students' IEP goals and objectives.

Reflections

Different styles of dissemination and different content for each audience are suggested by texts; I benefited from this suggestion. Though I was disappointed that the principal was unavailable to meet, in reflection, much of what was discussed was directly related to the teacher's planning and instruction, issues of more importance to her. She and I were able to discuss activities in detail and specific strategies to increase music making experiences and music learning, to increase positive peer interactions among students with and without disabilities, and to provide more opportunities for individual students to show what they know and can do. The teacher seemed optimistic and eager to plan and try these new strategies in the upcoming school year.

The teacher was incredibly receptive to feedback regarding the implications of the results. Letting someone into her classroom to observe her instruction on a daily basis was a deeply personal decision that not all teachers would have made. I made sure to present the data in a way that focused on each student's behavior in the context of the activities and formats, allowing the teacher to come up with some of the implications for her instruction as much as possible. She is among the highly valued teachers who benefit from new knowledge, who continue to learn, and ultimately who will have the greatest positive impact on their students' lives.

Chapter Five: Guidelines for Future Observational Research in Inclusive Music Classrooms

Over many decades, research in schools has employed a variety of methodologies, but there is little guidance for researchers who are interested in conducting research with students with disabilities in inclusive classrooms. There are few detailed reports of the logistics involved in conducting such research in schools. Given the many complexities in planning and implementing research of this type, personal reports may prove useful to those intending to collect data in inclusive music classrooms.

In this final chapter, I describe my experiences conducting observational research in four elementary music classrooms and, based on my experiences, offer guidelines that may assist and even encourage more researchers to pursue research in this area. This chapter presents guidelines related to selecting schools, classrooms, and participants; obtaining consent; determining the methodology (research variables, data collection, measurement, and reliability); analyzing and reporting results; and consulting with school personnel after the study.

SCHOOLS, CLASSROOMS, AND PARTICIPANTS

One of the primary concerns for researchers conducting observational research in inclusive music classrooms is identifying music classrooms that are not only inclusive but also in schools where administrators and teachers are generally supportive of the idea of research and will agree to having their students and teachers observed. I have listed below important considerations for site selection.

- Identify a school with a principal and teachers who support the project and who will continue to support the project throughout the lengthy process of obtaining parental consent and videotaping.

Finding a supportive school is a plus for researchers who conduct most all types of school-based research projects; however, it is of particular importance for researchers who conduct observation studies with children as participants. Observational research is often conducted over weeks or even months and thus requires a high level of involvement from school personnel, especially the teachers whose classes are being recorded. Gathering meaningful data in the natural settings of inclusive classrooms environments requires a supportive teacher, but also one who is not threatened by being observed. Obtaining parental consent forms requires coordination and collaboration among classroom teachers who communicate with students and parents on a regular basis. Also, researchers may require storage space for their equipment, and teachers may be asked to not only store but also operate the equipment.

- Identify inclusive classrooms for observation that have several students with disabilities in each classroom.

Identifying classes with multiple students with disabilities increases the likelihood that there will be sufficient data to reach meaningful conclusions. Some parents and guardians may not consent to their children's participation and there are also issues of absences and transfers.

Also, the nature of students' disabilities affects their behavior and students with different disabilities in the same classroom will in all likelihood behavior differently from one another. Students with a wide variety of disabilities receive services under IDEA, and many classrooms include students with varied challenges. At this time there is no report of the number of students with disabilities participating in inclusive music classrooms and their disability categories. Given the wide range of students with disabilities receiving services under IDEA and the unknown populations of inclusive

music classrooms, it is likely that the population in individual classrooms will be unique to each observational study.

CONSENT

Obtaining parental consent for students' participation in research projects is a standard of research, and researchers are well aware that they must satisfy the requirements of their universities, colleges, and school districts relative to this process. In observational research, parental consent is of particular concern in light of the fact that the number of participants may affect other methodological decisions (e.g., number of sessions, videotaping procedures). Also, although guides offer strategies that may be useful for gaining parental consent in general, it is unlikely that many music researchers have considered how this applies to children with disabilities and obtaining access to IEP documents. Recommendations are presented below with respect to obtaining parent/guardian consent, gaining access to IEP documents, and how these efforts affect research methods and procedures.

- Develop efficient procedures for a quick and high return of parental/guardian consent forms.

Research in inclusive classrooms often requires classrooms that are intact, with the same participants in every class session and in every observation. When researchers know which students in a classroom are or are not participating, informed decisions can be made regarding accommodations for nonparticipants and logistics for videotaping.

It is important for this process to finish as quickly as possible, keeping in mind that teachers' lesson plans may be affected by the number of nonparticipants, and teachers will want to make appropriate accommodations and still maintain the integrity of their lessons. It is possible that teachers and principals may not allow the project to

continue if a number of students will be sitting off to the side in an "off-camera" area throughout the entire research project. Again, the more quickly this process can be completed, the better.

- When observing behaviors and events related to IEP goals and objectives, consult with the special education staff early in the development of the project regarding document formats and obtaining consent.

Although IEPs by law must have specific content (e.g., services required, instructional goals, evaluations and assessments to qualify for services), formats can vary from state-to-state and district-to-district. Knowing the location of the information and how it is presented in the documents can help facilitate access to the necessary information. Also, since observational research is often ongoing throughout a school year and IEPs must be updated annually, classroom activities may need to be discontinued or added as an IEP document is updated.

Some schools and districts hold all IEP meetings to update IEP documents at specified times of the year; others spread these meetings throughout the year. If IEPs are to be considered in research questions, early in the process of developing the project researchers should communicate with the special education staff regarding IEP content and the school's schedule for updating IEPs. Also to be considered are the possible changes that may occur in a student's status during reevaluations and annual meetings; decisions may result in a student no longer receiving services under IDEA, no longer requiring an IEP, and perhaps being discontinued as a participant in the study.

METHODS

Good research requires an effective and appropriate methodology. Numerous texts discuss methodologies ranging from large-group experimental studies to case

studies. Observational research in inclusive classrooms comes with its own set of challenges. The following section offers recommendations to guide the decisions about research variables, data collection, measurement, and reliability.

- Consult the music education/music therapy literature and literature outside the music disciplines to identify both frequently- and infrequently-investigated variables study.

Music education research in inclusive classrooms, although limited, has included assessments of on-task and social behaviors more often than assessments related to IEP goals or music responses, for example. The literature may guide the formulations of research questions that are important to examine in music classrooms, and it is important to consider the characteristics and disabilities of participants in published studies.

Given the few students with disabilities that may be present in an inclusive classrooms, it is important to gather data on frequently examined variables and to compare results and interpret findings in relation to populations in other studies, studies with various disabilities, and those who are typically developing.

There is a need for research in inclusive music classrooms that investigates students' academic success, music learning, and learning related to IEP goals. Given that the primary goal for music education is the musical development of children, and that few studies have examined the music learning of children with disabilities in inclusive settings, this variable would seem of particular interest to the field.

Other understudied variables (e.g., IEP goals and objectives) are of high importance in students' overall school performance and are often considered essential skills for student's success in life's activities (e.g., reading, writing, social skills, communication). While conducting the study reported in Chapter 3, I found that many behaviors from students' IEP goals overlapped behaviors required for various music

activities. In fact, inclusive music classrooms provide an ideal environment for children with disabilities to develop musically as well as academically, emotionally, and socially, and they provide a rich and unique environment for researchers to examine a wide range of questions related to music and nonmusic learning.

- Consult the music education/music therapy literature and literature outside music disciplines for operational definitions for variables, develop other definitions as needed, and reach a final decision only after test trials.

As stated in many of the texts about systematic observation research, clear and concise operational definitions are critical; however, with few observational studies in the inclusive music classroom to guide decisions, researchers may need to consult literature in other fields (e.g., special education, psychology).

There is still much that is unknown about the behaviors of students with disabilities in inclusive music settings, and although literature that defines behaviors may be helpful, ultimately all definitions will need to be tested prior to beginning data collection. Since the data collection process in an observational study is laborious and lengthy, and the period for access to classrooms may be limited, researchers will want to take additional time to test their definitions prior to beginning the actual study. The time spent at the beginning will be well worth the effort.

- Determine the appropriate placement of cameras and the video recording procedures by testing several placements and angles and viewing sample videos of students engaged in various classroom activities.

Observational research in inclusive music settings is often on-going, and it may not be feasible to have a person operating the camera(s) at all times. Although there are differences among classrooms, in most instances students and teachers will move around the room during different activities, loudness levels will vary depending on the activities,

and some students may need to be off-camera if their parents do not consent to their participation. The quality of the videos will greatly affect the ease with which the observer can complete the task of recording data, and ultimately the accuracy of the data. Researchers need to plan adequate time to adjust camera angles to ensure that the cameras will capture and produce quality recordings of the desired areas of the classroom and study participants.

- Record a sufficient number of videos for each student.

In applied behavior analysis multiple observations are collected across time since the behavior of all students can vary from moment to moment and day to day. By recording multiple samples of behaviors within a specific music activity and instructional format, it is possible to obtain more representative depictions of study participants.

- Consider the preferred curriculum of elementary teachers and their planned schedule of activities when selecting days and weeks for conducting observations.

Unlike other music settings, elementary music teachers may work in units, planning different music activities and instructional formats for each unit. For example, a teacher preparing students for a performance may devote more time to whole-class music making (e.g., singing, playing instruments); preparing students for a fieldtrip to hear their local symphony might involve more time devoted to music listening. Also, classroom contexts affect students' behaviors. And if researchers are interested in examining behaviors in a variety of music activities and instructional formats, it may be necessary to consult the teacher regarding their curriculum to ensure that video observations can be conducted in a variety of contexts.

- Consider using music activities and instructional formats as a unit of measurement for behavioral observations.

As stated above, contexts influence students' behaviors and should be considered in the measurement of those behaviors. Classrooms are complex environments, although the music activity and instructional format can provide an organizational unit for measuring classroom behaviors.

- Plan adequate time to train the reliability observer(s), anticipating additional training for some variables even for observers with classroom experiences.

Many observational texts emphasize the importance of calculating interobserver agreement in observational research; yet, beyond presenting formulas for calculation, few discuss procedures for completing this task. Although training is necessary in all cases, this process may go more easily for classroom observations if the reliability observer has prior experience observing children. Researchers should anticipate several hours to complete the training procedure. Reliability observers must be trained to use the observation equipment or computer software, learn the operational definitions, and identify the target students. Training should be completed with recordings not used in the study, and a minimum of 80% reliability should be reached on every variable (Van Houten & Hall, 2001), even if additional training is necessary to reach this level.

Analyzing and Reporting Results

It is of particular importance that the data have implications for practice. The following section offers recommendations to guide decisions about analyzing and reporting results.

- Carefully select results to highlight in the report.

Observations of several behaviors for multiple students with disabilities will generate large amounts of data, and most likely data will vary widely across individual students. Display the data in ways that will illuminate trends for most students since

other types of statistical analyses may be inappropriate. Importantly, highlight findings that will generate new ideas for future research questions. This is also the time to consider how these findings can lead to the development of future research questions.

- Focus on individual results, looking for trends across individuals when possible.

Observational research historically focuses on the results of individuals in specific contexts and environments with the goal of improving the quality of life for these individuals. Trends will need to be identified through the careful examination of individual results. As you work with the data, identify highlights that will have importance for the individual participants, the teachers, and to some extent, the school, and determine findings you wish to share with other individuals (e.g., teachers, principal). Results for individuals may also be useful for teachers who continue to work with the participants beyond the scope of the research study. By examining the data of a specific child, individualized strategies for instruction may be developed.

CONSULTATION

Consultation with the school personnel who are involved in the study is necessary to connect research and practice. Many texts do not guide researchers on ways to engage in this collaboration. Below are several recommendations.

- Prepare information specific to the interests of the school staff attending the meeting.

Teachers and administrators may have different interests in the research findings, but prepare an overview of the results that are appropriate for both. Most likely, teachers will be more interested in implications of the results for their practices working with students with and without disabilities in the same setting. Prepare information that includes implications for their day-to-day practice that may not appear in the final report.

If there is a particular interest in specific behaviors or certain students, it may be appropriate to prepare video examples to watch and discuss, encouraging the teachers to engage in self-evaluation. Bringing the results back to the school staff in a personal, positive, and productive manner may continue to build positive rapport that leads to the teachers' willingness to participate in future research projects, knowing that they and their students will benefit from discussions and feedback related to the findings.

- When presenting data, focus on the behaviors of the students and the contexts in which the behaviors occur.

Teachers who allow video cameras into their classrooms place themselves, in some respects, in a vulnerable situation. Placing the emphasis on activities and formats can make conversations about the results less threatening. Teachers control the activities and formats for lesson plans, and emphasis on ways these variables influence students' behaviors suggests that changes in activities and formats will most likely result in changes in students' behaviors. Knowing that changes in activities and formats can be accomplished without compromising the curricular goals allows teachers to think more about ways they can positively influence their students' behaviors.

- Provide numerous opportunities for the teacher to interpret the results and to draw implications for their teaching practices and for their students.

Elementary music teachers have the advantage of working with the same students for many days and across several years. From these experiences, most teachers gain a deep knowledge of their students' individual characteristics and behaviors. Most also have clear ideas about what they value for their music programs and what they want their students to learn and do. When presented with research findings for a group or individuals, teachers may well have insights beyond those of the researcher. When presented with data for students whom teachers may classify as "outgoing," "shy," or

"off-task," teachers may consider how different activities and instructional formats function to reinforce particular behaviors and may even suggest activities and formats they want to increase or decrease to bring out the best in students and allow them to be more successful. Encouraging teachers to develop their own plans based on the data may give them a sense of ownership of the results and encourage them to bring about changes that will positively affect their students.

In summary, conducting research in schools, particularly observational research, can be difficult. Challenges may arise throughout the process, requiring revisions in research questions, methodology, and measurement procedures. Although many texts present general recommendations for conducting school research, conducting research in inclusive music classrooms requires careful attention to the unique characteristics of this particular learning environment. Given the lack of research in inclusive music classrooms and the need to continue to develop evidence-based practices, these guidelines are presented to assist and even encourage more researchers to contribute their expertise to this much needed area of research. By doing so, members of the research community will contribute to the ultimate goal of providing a quality music education for *all* students.

Appendices

APPENDIX A

Consent Letter From the Principal

January 22, 2013

Dr. James Wilson, Ph.D.
Chair, Institutional Review Board
P.O. Box 7426
Austin, TX 78713
irbchair@austin.utexas.edu

Dear Dr. Wilson:

The purpose of this letter is to grant Ellary Draper, a doctoral student in Music and Human Learning at The University of Texas at Austin, permission to conduct research at Oak Meadows Elementary School. The project, "Activities in Inclusive Elementary Music Classrooms: Participating, Interacting, and Practicing IEP Goals" entails videotaping two 3rd and 4th grade sections (four total) of general music classes (100 children). Oak Meadows Elementary School was selected because of our ongoing positive relationship with the Music and Human Learning Division at the Butler School at UT. We have welcomed undergraduate music students for observations and have been the site for music research in the past. I, Alejandro Góngora principal, do hereby grant permission for Ellary Draper to conduct this study at Oak Meadows Elementary School.

Sincerely,

APPENDIX B

Consent Letter From the Teacher

January 22, 2013

Dr. James Wilson, Ph.D.
Chair, Institutional Review Board
P.O. Box 7426
Austin, TX 78713
irbchair@austin.utexas.edu

Dear Dr. Wilson:

The purpose of this letter is to grant Ellary Draper, a doctoral student in Music and Human Learning at The University of Texas at Austin, permission to conduct research at Oak Meadows Elementary School. The project, "Activities in Inclusive Elementary Music Classrooms: Participating, Interacting, and Practicing IEP Goals" entails videotaping two 3rd and 4th grade sections (four total) of general music classes (100 children). Oak Meadows Elementary School was selected because of our ongoing positive relationship with the Music and Human Learning Division at the Butler School at UT. We have welcomed undergraduate music students for observations and have been the site for music research in the past. I am the music teacher at Oak Meadows Elementary School. I, Elizabeth Hulse, do hereby grant permission for Ellary Draper to conduct this study in my classroom at Oak Meadows Elementary School.

Sincerely,

APPENDIX C

IRB Approval

OFFICE OF RESEARCH SUPPORT

THE UNIVERSITY OF TEXAS AT AUSTIN

P.O. Box 7426, Austin, Texas 78713 · Mail Code A3200
(512) 471-8871 · FAX (512) 471-8873

FWA # 00002030

Date: 03/22/13

PI: Ellary A. Draper

Dept: Music

Title: Activities in Inclusive Elementary Music Classrooms: Participating, Interacting, and Practicing IEP Goals

Re: IRB Expedited Approval for Protocol Number 2013-01-0123

Dear Ellary A. Draper:

In accordance with the Federal Regulations the Institutional Review Board (IRB) reviewed the above referenced research study and found it met the requirements for approval under the Expedited category noted below for the following period of time: 03/22/2013 to 03/21/2014 . *Expires 12 a.m. [midnight] of this date.* If the research will be conducted at more than one site, you may initiate research at any site from which you have a letter granting you permission to conduct the research. You should retain a copy of the letter in your files.

Expedited category of approval:

☐ 1) Clinical studies of drugs and medical devices only when condition (a) or (b) is met. (a) Research on drugs for which an investigational new drug application (21 CFR Part 312) is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review). (b) Research on medical devices for which (i) an investigational device exemption application (21 CFR Part 812) is not required; or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.

☐ 2) Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows: (a) from healthy, non-pregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week; or (b) from other adults and children2, considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8 week period and collection may not occur more frequently than 2 times per week.

☐ 3) Prospective collection of biological specimens for research purposes by non-invasive means. Examples:
   (a) Hair and nail clippings in a non-disfiguring manner.
   (b) Deciduous teeth at time of exfoliation or if routine patient care indicates a need for extraction;
   (c) Permanent teeth if routine patient care indicates a need for extraction.

(d) Excreta and external secretions (including sweat).
(e) Uncannulated saliva collected either in an un-stimulated fashion or stimulated by chewing gumbase or wax or by applying a dilute citric solution to the tongue.
(f) Placenta removed at delivery.
(g) Amniotic fluid obtained at the time of rupture of the membrane prior to or during labor.
(h) Supra- and subgingival dental plaque and calculus, provided the collection procedure is not more invasive than routine prophylactic scaling of the teeth and the process is accomplished in accordance with accepted prophylactic techniques.
(i) Mucosal and skin cells collected by buccal scraping or swab, skin swab, or mouth washings.
(j) Sputum collected after saline mist nebulization.

☐ 4) Collection of data through non-invasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving x-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are not generally eligible for expedited review, including studies of cleared medical devices for new indications).
Examples:
(a) Physical sensors that are applied either to the surface of the body or at a distance and do not involve input of significant amounts of energy into the subject or an invasion of the subject's privacy.
(b) Weighing or testing sensory acuity.
(c) Magnetic resonance imaging.
(d) Electrocardiography, electroencephalography, thermography, detection of naturally occurring radioactivity, electroretinography, ultrasound, diagnostic infrared imaging, doppler blood flow, and echocardiography.
(e) Moderate exercise, muscular strength testing, body composition assessment, and flexibility testing where appropriate given the age, weight, and health of the individual.

☐ 5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for non-research purposes (such as medical treatment or diagnosis).
Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(4). This listing refers only to research that is not exempt.

☒ 6) Collection of data from voice, video, digital, or image recordings made for research purposes.

☒ 7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.
Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b)(3). This listing refers only to research that is not exempt.

☒ Use the attached approved informed consent document(s).

☐ You have been granted a Waiver of Documentation of Consent according to 45 CFR 46.117 and/or 21 CFR 56.109(c)(1).

☐ You have been granted a Waiver of Informed Consent according to 45 CFR 46.116(d).

APPENDIX D

Parent Consent Letter

Dear Parent,

My name is Ellary Draper, and I am a PhD student in Music and Human Learning in the Butler School of Music at The University of Texas. I am currently conducting a study regarding participation and social interactions in inclusive general music classrooms. I am interested in identifying types of music activities that promote children's on-task and successful participation and also promote positive interactions among the children. Since some children with disabilities are included in general music classrooms, for those children with disabilities I also want to identify music activities that will help them learn and practice their individual education program (IEP) goals. To identify these types of positive music activities, I would like to videotape general music classrooms at your child's school.

I would like to invite your child to participate as a member of his or her music class. There will be no interventions in this study, only observations of regular music class activities. Attached is the consent form that gives specific details regarding my study. In addition to giving your consent for participation, if you have a child who is currently receiving special education services, I will also need your consent to review your child's IEP and look at his or her current goals. This will allow me to determine what music activities are facilitating his or her learning and practicing of these IEP goals. I greatly appreciate your consideration in allowing your child to participate. If you wish for your child to participate, please return the consent form to your child's classroom teacher. If you have any questions, please feel free to contact me at edraper@utexas.edu or 512-520-5477.

Sincerely,

Parental Permission for Children Participation in Research

Title: Activities in Inclusive Elementary Music Classrooms: Participating, Interacting, and Practicing IEP Goals.

Introduction

The purpose of this form is to provide you (as the parent of a prospective research study participant) with information that may affect your decision as to whether or not to let your child participate in this research study. This form will describe the study to you. Read the information below and ask any questions by calling or emailing the Principal Investigator listed at the top of this form. If you decide to let your child be involved in this study, this form will be used to record your permission.

Purpose of the Study

If you agree, your child will be asked to participate in a research study about ways children participate in general music classrooms. The purpose of this study is to observe levels of participation, social interaction among peers, and for students with disabilities activities that will help them learn and practice their individual education program (IEP) goals. Up to 100 participants will be recruited for the study. The research questions are as follows:

1. What is the level of participation of children in the general music classroom? Does the level of participation vary across activities (e.g. singing, playing instruments)?
2. What types of social interactions can be observed in the general music class and do these vary across activities?
3. What activities provide opportunities for students with disabilities to learn and practice their IEP goals?

What is my child going to be asked to do?

If you allow your child to participate in this study, they will not be asked to do anything other than be videotaped as they participate with their classmates in their music classes as usual.

Experimental Procedures

- The researcher will set up video cameras to videotape the general music classes.
- The researcher will ask children to raise their hands if they agree to be video recorded during their music class.
- Each music class will be recorded a minimum of four times over the spring semester.
- The videotapes will be watched by the researcher and coded to collect data regarding participation, social interactions, and for students with disabilities activities that will help them learn and practice their individual education program (IEP) goals.

What are the risks involved in this study?

There are minimal risks for students. Your child will not be identified by name, but since your child will be on the videotape, it is possible, although unlikely, that he or she will be recognized by observers of the videotapes.

Again, if you wish to discuss the information above or any other risks you may experience, you may ask questions by calling or emailing the Principal Investigator listed at the top of this form.

What are the possible benefits of this study?

Your child will receive no direct benefit from participating in this study; however, it will provide music teachers with a greater understanding of students' participation and social interactions in music classes.

Does my child have to participate?

No, your child's participation in this study is voluntary. Your child may decline to participate or to withdraw from participation at any time. Withdrawal or refusing to participate will not affect you or your child's relationship with The University of Texas at Austin (University) in anyway. You can agree to allow your child to be in the study now and change your mind later without any penalty.

What if my child does not want to participate?

In addition to your permission, your child must agree to participate in the study. If you child does not want to participate, he or she will not be included in the study and there will be no penalty. If your child initially agrees to be in the study they can change their mind later without any penalty.

Will there be any compensation?

Neither you nor your child will receive any type of payment participating in this study.

What are the confidentiality or privacy protections for my child's participation in this research study?

This study is confidential; confidentiality and privacy will be maintained to the full extent possible throughout the study. Pseudonyms (fake names) will be assigned for data collection and reporting.

If you choose for your child to participate in this study, your child will be video recorded while participating in regular music classes. Any video recordings will be stored securely and only the research team will have access to the recordings. Recordings will be kept for 2 years and then erased. The data resulting from your participation may be used for future research or be made available to other

researchers for research purposes not detailed within this consent form. Videos may also be used for professional conference presentations or classroom demonstrations. The face of participants will be in view in the videotapes, so it is possible, although unlikely, that the viewers may recognize your child.

Whom to contact with questions about the study?

Prior, during, or after your participation, you may contact the researcher Ellary Draper at (512) 520-5477 or send an email to edraper@utexas.edu. This study has been reviewed and approved by The University Institutional Review Board and the study number is 2013-01-0123.

Whom to contact with questions concerning your rights as a research participant?

For questions about your rights or any dissatisfaction with any part of this study, you can contact, anonymously if you wish, the Institutional Review Board by phone at (512) 471-8871 or email at orsc@uts.cc.utexas.edu.

Signature

You are making a decision about allowing your child to participate in this study. Your signature below indicates that you have read the information provided above and have decided to allow he or she to participate in the study. If you later decide that you wish to withdraw your permission for your child to participate in the study, you may discontinue his or her participation at any time. You will be given a copy of this document.

_____

Printed Name of Child

_____ _____

Signature of Parent(s) or Legal Guardian Date

_____ _____

Signature of Investigator Date

Permission to Use Video Tapes for Educational Purposes:

We may wish to present some of the videotapes from this study at scientific conventions or as demonstrations in classrooms. Please sign below if you are willing to allow us to do so with your child visible in the videotape. The face of your child will be in view in the videotapes along with other members of his or her class, so it is possible that viewers might recognize your child, although names will not be associated with any children in the videotapes.

I hereby give permission for the video (audio) tape made for this research study TO be used at scientific conventions or as demonstrations in classrooms.

Signature: _____ Date: _____

(ONLY FOR PARENTS OF CHILDREN RECEIVING SPECIAL EDUCATION SERVICES) Permission to access goals on the Individual Education Program (IEP)

We would like to know about your child's IEP goals and objectives to see if these goals can be learned and practice through music activities. The only information gathered from the IEP will be current goals and objectives. The primary investigator will access the original file and record current goals and objectives using pseudonyms. No other information would be gathered, and no copies of the file will be made.

I herby give permission for the primary researcher, Ellary Draper, to access my child's IEP to identify goals and objectives.

Signature: _____ Date: _____

APPENDIX E

3rd-Grade Students' IEP Goals and Objectives (Table 4) and 4th-Grade Students' IEP Goals and Objectives (Table 5)

Table 4

3rd-grade students' IEP goals and objectives

Student (Gender, Age, Classroom)	Diagnosis	Goal	Objectives
Cole (Male, 9, General)	Specific Learning Disability, Speech Impairment, Other Health Impairment	Receptive language skills	Answer wh- questions about stories
		Expressive language skills	Describe curriculum-based vocabulary with 80% accuracy
			Describe similarities and differences between words
		Increased fluency in speech	Use fluency strategies in structured phrases/sentences
		Add and subtract*	Select addition and solve problems using two-digit numbers
			Select subtraction and solve problems using two-digit numbers
		Use place value to communicate about increasingly large whole numbers (written and verbal) including money*	Use place value to read the value of whole numbers (through 999,999)
			Use place value to write the value of whole numbers (through 999,999)

Table 4 continued

Student (Gender, Age, Classroom)	Diagnosis	Goal	Objectives
Cole (Male, 9, General)	Specific Learning Disability, Speech Impairment, Other Health Impairment	Read aloud grade-level stories with fluency and comprehension*	Retell important events in stories in logical order
			Use phonological knowledge to match sounds to letters to construct unknown words
		Write legibly and use appropriate capitalization and punctuation in compositions*	Recognize and use punctuation marks, including: ending punctuation in sentences; apostrophes and contractions; and apostrophes and possessives
			Use capitalization for proper nouns; months and days of the week; and the salutation and closing of a letter
James (Male, 10, General)	Specific Learning Disabilities, Speech Impairment	Receptive language skills	Identify the main idea of paragraphs/short stories
			Answer wh- questions about stories
		Expressive language skills	Complete analogies accurately
			Retell the major events of a short story
		Add and subtract*	Recall basic addition facts (sums to 18)
			Select addition and solve problems using two-digit numbers
			Select subtraction and solve problems using two-digit numbers
		Place value to represent whole numbers*	Read numbers (through 999)
			Use place value to order whole numbers (through 999,999)

Table 4 continued

Student (Gender, Age, Classroom)	Diagnosis	Goal	Objectives
James (Male, 10, General)	Specific Learning Disabilities, Speech Impairment	Spell correctly*	Spell high-frequency words from a commonly used list
			Use letter-sound patterns to spell
			Use phonological knowledge to match sounds to letters to construct known words
		Use appropriate capitalization and punctuation in compositions*	Form upper- and lower-case letters legibly using the basic conventions of print
			Recognize and use basic capitalization for: the beginning of sentences; the pronoun "I"; and names of people
			Recognize and use punctuation marks, including: ending punctuation in sentences; apostrophes and contractions; and apostrophes and possessives
		Analyze how words, images, graphics, and sounds work together in various forms to impact meaning*	Identify syllables in spoken words
			Identify the common sounds that letters represent
			Monitor and adjust comprehension (e.g., using background knowledge, creating sensory images, rereading a portion aloud).
			Retell the order of events in a text by referring to the words and/or illustrations
			Identify a sentence made up of a group of words
		Spell correctly*	Spell high-frequency words from a commonly used list

Table 4 continued

Student (Gender, Age, Classroom)	Diagnosis	Goals	Objectives
James (Male, 10, General)	Specific Learning Disabilities, Speech Impairment	Read aloud grade-level stores with fluency and comprehension*	Combine sounds from letters and common spelling patterns (e.g., consonant blends, long- and short-vowel patterns) to create recognizable words
			Identify and read at least 100 high-frequency words from a commonly used list
			Recognize the change in a spoken word when a specified phoneme is added, changed, or removed (e.g., /b/l/o/w/ to /g/l/o/w/)
			Segment spoken one-syllable words of three to five phonemes into individual phonemes (e.g., splat = /s/p/l/a/t/)
			Distinguish between long- and short-vowel sounds in spoken on-syllable words (e.g., bit/bite).
Martin (Male, 10, General)	Learning Disability in Reading Comprehension, Math Calculation in all core subject areas	Use patterns in multiplication and division*	Generate a table of paired numbers based on a real-life situation such as insects and legs
			Identify patterns in related division sentences (fact families) such as 2 x 3 = 6, 3 x 2 = 6, 6 / 2 = 3, 6 / 3 = 2
			Identify patterns in related multiplication sentences (face families) such as 2 x 3 = 6, 3 x 2 = 6, 6 / 2 = 3, 6 / 3 = 2
			Use patterns to develop strategies to remember basic multiplication facts
			Use patterns to multiply by 10 and 100
		Multiply and divide to solve meaningful problems involving whole numbers*	Apply multiplication facts through the tens using concrete models

Table 4 continued

Student (Gender, Age, Classroom)	Diagnosis	Goals	Objectives
Martin (Male, 10, General)	Learning Disability in Reading Comprehension, Math Calculation in all core subject areas		Model factors using area models
			Model factors using arrays
			Model products using arrays
			Recite multiplication facts through the tens using concrete models
		Add and subtract to solve meaningful problems involving whole numbers and decimals*	Add decimals to the hundredths place using concrete and pictorial models
			Select addition or subtraction and use the operation to solve problems involving whole numbers through 999
			Subtract decimals to the hundredths place using concrete and pictorial models
		Describe and compare factional parts of whole objects or sets of objects*	Compare fractional parts of whole objects in a problem situation using concrete models
			Construct concrete models of equivalent fractions for fractional parts of whole pieces
			Use fraction names to describe fractional parts of whole objects with denominators of 12 or less
			Use symbols to describe fractional parts of whole objects with denominators of 12 or less
		Use elements of the writing process to compose text*	Develop drafts by sequencing ideas through writing sentences

Table 4 continued

Student (Gender, Age, Classroom)	Diagnosis	Goals	Objectives
Martin (Male, 10, General)	Learning Disability in Reading Comprehension, Math Calculation in all core subject areas		Edit drafts for grammar, punctuation, and spelling using a teacher-developed rubric
			Plan a first draft by generating ideas for writing (e.g., drawing, sharing ideas, listen key ideas)
			Revise drafts by adding or deleting words, phrases, or sentences
		Read independently for a sustained period of time and paraphrase what the reading was about, maintaining meaning and logical order*	Ask relevant questions, seek clarification, and locate facts and details about stories and other texts and support answers with evidence from text
			Establish purpose for reading selected texts and monitor comprehension, making corrections and adjustments when that understanding breaks down (e.g., identifying clues, using background knowledge, generating questions, re-reading a portion aloud)
		Understand, make inferences and draw conclusions about the structure and elements of fiction and provide evidence from text to support understanding*	Describe main characters in works of fiction, including their traits, motivations, and feelings

Table 4 continued

Student (Gender, Age, Classroom)	Diagnosis	Goals	Objectives
Martin (Male, 10, General)	Learning Disability in Reading Comprehension, Math Calculation in all core subject areas		Locate facts that are clearly stated in a text
			Sequence and summarize the plot's main events and explain their influence on future events
			Use ideas (e.g., illustrations, titles, topic sentences, key words, and foreshadowing) to make and confirm predictions
		Understand new vocabulary and use it when reading and writing*	Identify and use antonyms, synonyms, homographs, and homophones
			Identify the meaning of common prefixes (e.g., in-, dis-) and suffixes (e.g., -full, -less), and know how they change the meaning of roots
			Use context to determine the relevant meaning of unfamiliar words or distinguish among multiple meaning words and homographs
Peter (Male, 9, General)	Learning Disability in the areas of Written Expression and Math Calculation	Maintain compliant behaviors	Rewarded for recognizing his energy level, and rewarded for correctly applying a calming technique
			Rewarded for starting a simple assignment with minimal teacher involvement and again for completing the assignment with minimal teacher assistance
			Increase the amount of time he is sitting in his seat or standing at his desk

Table 4 continued

Student (Gender, Age, Classroom)	Diagnosis	Goals	Objectives
Peter (Male, 9, General)	Learning Disability in the areas of Written Expression and Math Calculation	Add and subtract to solve meaningful problems involving whole numbers and decimals	Select addition or subtraction and use the operation to solve problems involving whole numbers through 999
			Recite multiplication facts through the tens using concrete models
		Write legibly and use appropriate capitalization, spelling and punctuation conventions in compositions	Form upper- and lower-case letters legibly in text, using the basic conventions of print (left-to-right and top-to-bottom progression), including spacing between words and sentences
			Recognize and use basic capitalization for: the beginning of sentences; the pronoun "I"; and names of people
			Recognize and use punctuation marks at the end of declarative, exclamatory, and interrogative sentences
			Use knowledge of letter sounds, word parts, word segmentation, and syllabication to spell
		Read independently for a sustained period of time and paraphrase what the reading was about, maintaining meaning and logical order*	Locate the facts that are clearly stated in a text
			Retell important events in stories in logical order
			Ask relevant questions, seek clarification, and locate facts and details about stories and other texts and support answers with evidence from text

Table 4 continued

Student (Gender, Age, Classroom)	Diagnosis	Goals	Objectives
Rick (Male, 10, General)	Not specified	Appropriate articulation	Produce /r/ and /l/ clusters in words at the phrase/sentence level^
			Produce /z/ at the phrase/sentence level^
			Produce the /s/ sound at the phrase/sentence level^
Ray (Male, 10, Bilingual)	Speech Impairment	Expressive language skills	Answer wh- questions about stories
			Describe similarities and differences between words
			Produce sentences with target vocabulary
		Articulation skills	Produce /ch/ in words at the sentence/conversation level
			Produce the tap /r/ in words at the sentence/conversation level

Table 5

4th-grade students' IEP goals and objectives

Student (Gender, Age, Classroom)	Diagnosis	Goals	Objectives
Adam (Male, 11, General)	Learning Disability in Reading Comprehension	Recognize patterns in mathematics situations*	Extend the table of related number pairs based on a real-life situation
			Generate a table of paired numbers based on a real-life situation such as insects and legs
			Identify patterns in a table of related number pairs based on a real-life situation
		Use fractions to describe parts of a whole*	Compare fractional parts of whole objects in a problem situation using concrete models
			Construct concrete models of equivalent fractions for fractional parts of whole objects
			Construct concrete models of fractions
			Use fraction names to describe fractional parts of sets of objects with denominators of 12 or less
			Use fraction names to describe fractional parts of whole objects with denominators of 12 or less
		Use critical thinking and scientific problem solving to make informed decisions*	Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations
		Use elements of the writing process to compose text*	Develop drafts by categorizing ideas and organizing them into paragraphs
			Edit drafts for grammar, mechanics, and spelling

Table 5 continued

Student (Gender, Age, Classroom)	Diagnosis	Goals	Objectives
Adam (Male, 11, General)	Learning Disability in Reading Comprehension		Plan a first draft by selecting a genre appropriate for conveying the intended meaning to an audience and generating ideas through a range of strategies (e.g., brainstorming, graphic organizers, logs, journals)
			Revise drafts for coherence, organization, use of simple and compound sentences, and audience
		Analyze, make inferences, and draw conclusions about theme and genre in different cultural, historical, and contemporary contexts and provide evidence from the text to support understanding*	Ask relevant questions, seek clarification, and locate facts and details about stories and other texts and support answers with evidence from text
			Draw conclusions from the facts presented in text and support those assertions with textual evidence
			Sequence and summarize the plot's main events and explain their influence on future events
		Understand new vocabulary and use it when reading and writing*	Identify the meaning of common prefixes (e.g., in-, dis-) and suffixes (e.g., -full, -less), and know how they change the meaning of roots
			Use context to determine the relevant meaning of unfamiliar words or distinguish among multiple meaning words and homographs

Table 5 continued

Student (Gender, Age, Classroom)	Diagnosis	Goals	Objectives
Raul (Male, 11, General)	Learning Disability in the areas of Reading Comprehension, Basic Reading, Math Reasoning, Learning Comprehension, and Oral Expression	Add, subtract, multiply and divide to solve meaningful problems	Recite multiplication facts through the tens using concrete models
			Solve division problems related to multiplication facts (fact families) such as 9 x 9 = 81 and 81 / 9 = 9
			Use a problem-solving model that incorporates understanding the problem
		Use scientific inquiry methods during laboratory and outdoor investigations*	Collect and record data by observing and measuring, using the metric system, and using descriptive words and numerals such as labeled drawings, writing, and concept maps
			Communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion
		Use elements of the writing process to compose text*	Develop drafts by categorizing ideas and organizing them into paragraphs
			Edit drafts for grammar, mechanics, and spelling
			Recognize and use punctuation marks including: commas in compound sentences; and quotation marks
			Write legibly by selective cursive script to manuscript printing as appropriate
		Read aloud grade level stories with fluency and comprehension	Monitor and adjust comprehension (e.g., using background knowledge, creating sensory images, re-reading a portion aloud, generating questions)

Table 5 continued

Student (Gender, Age, Classroom)	Diagnosis	Goals	Objectives
Raul (Male, 11, General)	Learning Disability in the areas of Reading Comprehension, Basic Reading, Math Reasoning, Learning Comprehension, and Oral Expression		Use the context of the sentence (e.g., in-sentence example or definition) to determine the meaning of unfamiliar words or multiple meaning words
			Summarize the main ideas and supporting details in text in ways that maintain meaning
Kristen (Female, 10, General)	Learning Disability in the areas of Reading Comprehension, Reading Fluency, and Math Calculation	Make generalizations based on patterns and relationships*	Convert fractions to decimals and percentages hat name tenths and hundredths using models
			Use place value to order fractions and decimals involving tenths and hundredths, including money, using concrete models
			Describe the relationship between two sets of related data such as ordered pairs in a table
			Select addition, subtraction, multiplication, or division and use the operation to solve problems involving whole numbers
		Use elements of the writing process to compose text*	Develop drafts by categorizing ideas and organizing them into paragraphs
			Edit drafts for grammar, punctuation, and spelling
		Draw conclusions about theme and genre in different cultural,	Draw conclusions from the facts presented in text and support those assertions with textual evidence

		historical, and contemporary contexts and provide evidence from the text to support understanding*	
			Paraphrase the themes and supporting details of fables, legends, myths, or stories
		Read aloud grade-level stories with fluency and comprehension*	Ask relevant questions, seek clarification, and locate facts and details about stories and other texts and support answers with evidence from text
			Establish purpose for reading selected texts and monitor comprehension, making corrections and adjustments when that understanding breaks down (e.g., identifying clues, using background knowledge, generating questions, re-reading a portion aloud)

APPENDIX F

Individual Behavior Tables (Tables 6-14)

Table 6

Cole's (3rd-grade) behavior by session

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
1	-	Non-instructional	1:36	5	0-8 (4)	00:20 (20.83%)
	Music Theory	Whole Class Talk/Listen	18:38	4	0-6 (3)	00:11 (0.98%)
	Music Theory	Dyad Talk	00:56	5	0-11 (3)	00:17 (30.36%)
	Music Theory	Whole Class Talk/Listen	1:07	1	0 - <5 (2)	00:02 (2.99%)
	-	Non-instructional	2:19	2	0 - <5 (2)	00:04 (2.88%)
	Music Theory	Whole Class Worksheet	16:52	16	0-13 (4)	1:03 (6.23%)
	-	Non-instructional	1:39	0	0 (0)	0 (0%)
2	-	Non-instructional	00:40	0	0 (0)	0 (0%)
	Music Theory	Dyad Talk	1:20	2	0-9 (6)	00:13 (16.25%)
	-	Non-instructional	00:30	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	8:38	7	0-75 (18)	2:07 (24.52%)
	-	Non-instructional	3:17	1	0-26 (26)	00:26 (13.20%)
	Music Theory	Dyad Talk	16:15	21	0-107 (18)	6:25 (39.49%)
	-	Non-instructional	1:20	0	0 (0)	0 (0%)
	Music Theory	Large Group Game	11:00	11	0-25 (5)	00:57 (8.64%)
	-	Non-instructional	1:15	0	0 (0)	0 (0%)

Table 6 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
3	-	Non-instructional	5:15	0	0 (0)	0 (0%)
	Playing Instruments	Whole Class Music Making	15:05	17	0-43 (9)	2:37 (17.35%)
	Singing & Playing	Whole Class Music Making	20:20	32	0-17 (6)	3:09 (15.49%)
	-	Non-instructional	2:38	1	0 - <5 (3)	00:03 (1.90%)
Assigned Peer Interactions						
1	Music Theory	Dyad Talk	00:56	3	0 - <5 (3)	00:10 (17.86%)
2	Music Theory	Dyad Talk	1:20	3	0-30 (18)	00:54 (67.50%)
	Music Theory	Dyad Talk	16:15	22	0-76 (17)	6:07 (37.64%)
3	N/A	N/A	N/A	N/A	N/A	N/A
Unassigned Peer Interactions						
1	-	Non-instructional	2:19	3	0 - <5 (1)	00:02 (1.44%)
	Music Theory	Whole Class Worksheet	16:52	39	0-21 (5)	3:34 (21.15%)
2	Music Theory	Dyad Talk	16:15	3	0 - <5 (3)	00:10 (1.03%)
	Music Theory	Large Group Game	11:00	2	0-8 (6)	00:13 (1.97%)
3	Playing Instruments	Whole Class Music Making	15:05	1	0 - <5 (4)	00:04 (.44%)
	Singing & Playing	Whole Class Music Making	20:20	3	0-6 (4)	00:08 (.66%)
Off-task Peer Interactions						
1			-	0	0 (0)	0 (0%)
2	Music Theory	Dyad Talk	16:15	1	0-12 (12)	00:12 (1.23%)
	Music Theory	Large Group Game	11:00	6	0-7 (4)	00:24 (3.64%)

Table 6 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-task Peer Interactions						
3			-	0	0 (0)	00:00 (0%)
Reading/Writing IEP Opportunities						
1	Music Theory	Whole Class Worksheet	16:52	1	0-16:52 (16:52)	16:52 (100%)
2, 3	N/A	N/A	N/A	N/A	N/A	N/A
Reading/Talking IEP Opportunities						
1	Music Theory	Whole Class Talk/Listen	18:38	1	0-18:38 (18:38)	18:38 (100%)
	Music Theory	Dyad Talk	00:56	1	0-56 (56)	00:56 (100%)
	Music Theory	Whole Class Talk/Listen	01:07	1	0-67 (67)	1:07 (100%)
2	Music Theory	Dyad Talk	1:20	1	0-80 (80)	1:20 (100%)
3	N/A	N/A	N/A	N/A	N/A	N/A
Verbal/Nonverbal Correct						
1	Music Theory	Whole Class Talk/Listen	01:07	2	-	-
2			-	0	-	-
3	Singing & Playing	Whole Class Music Making	20:20	4	-	-
Verbal/Nonverbal Approximate						
1			-	0	-	-
2	Music Theory	Whole Class Talk/Listen	8:38	1	-	-
3			-	0	-	-
Verbal/Nonverbal Incorrect						
1, 2, 3			-	0	-	-

Table 6 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Music Performance Correct						
1, 2	N/A	N/A	N/A	N/A	N/A	N/A
3	Singing & Playing	Whole Class Music Making	20:20	2	0-22 (17)	00:35 (2.85%)
Off-Camera						
1			43:10	16	0-13:15 (53)	14:14 (32.95%)
2			44:15	7	0-2:27 (29)	3:23 (7.66%)
3			43:18	25	0-40 (9)	3:36 (8.31%)

Note. Total duration for session 1 = 43:10, Total duration for session 2 = 44:15, Total duration for session 3 = 43:18. N/A = no opportunity for a response.

Table 7

James' (3rd-grade) behavior by session

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
1	-	Non-instructional	1:36	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	18:38	23	0-23 (3)	1:08 (6.08%)
	Music Theory	Dyad Talk	00:56	2	0 - <5 (2)	00:04 (7.14%)
	Music Theory	Whole Class Talk/Listen	1:07	2	0 - <5 (1)	00:02 (2.99%)
	-	Non-instructional	2:19	4	0-18 (8)	00:32 (23.02%)
	Music Theory	Whole Class Worksheet	16:52	12	0-6 (4)	00:42 (4.15%)
	-	Non-instructional	1:39	0	0 (0)	0 (0%)
2	-	Non-instructional	00:40	0	0 (0)	0 (0%)
	Music Theory	Dyad Talk	1:20	3	0-17 (8)	00:24 (30%)
	-	Non-instructional	00:30	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	8:38	7	0-19 (8)	00:59 (11.39%)
	-	Non-instructional	3:17	0	0 (0)	0 (0%)
	Music Theory	Dyad Talk	16:15	25	0-28 (9)	3:48 (23.38%)
	-	Non-instructional	1:20	0	0 (0)	0 (0%)
	Music Theory	Large Group Game	11:00	16	0-27 (6)	1:33 (14.09%)
	-	Non-instructional	1:15	0	0 (0)	0 (0%)
3	-	Non-instructional	5:15	0	0 (0)	0 (0%)
	Playing Instruments	Whole Class Music Making	15:05	1	0-10 (10)	00:10 (1.1%)

Table 7 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
	Singing & Playing	Whole Class Music Making	20:20	10	0-18 (5)	00:52 (4.27%)
	-	Non-instructional	2:38	3	0-6 (5)	00:14 (8.86%)
Assigned Peer Interactions						
1	Music Theory	Dyad Talk	00:56	1	0-29 (29)	00:29 (51.79%)
2	-	Non-instructional	00:40	1	0 - <5 (1)	00:01 (2.5%)
	Music Theory	Dyad Talk	1:20	2	0-35 (21)	00:41 (51.25%)
	-	Non-instructional	3:17	1	0 - <5 (1)	00:01 (.51%)
	Music Theory	Dyad Talk	16:15	33	0-1:56 (14)	7:57 (48.92%)
3	N/A	N/A	N/A	N/A	N/A	N/A
Unassigned Peer Interactions						
1	Music Theory	Whole Class Worksheet	16:52	1	0-22 (22)	00:22 (2.17%)
2	Music Theory	Dyad Talk	1:20	1	0 - <5 (3)	00:03 (3.75%)
	Music Theory	Dyad Talk	16:15	1	0 - <5 (5)	00:05 (.51%)
3			-	0	0 (0)	0 (0%)
Off-task Peer Interactions						
1			-	0	0 (0)	0 (0%)
2	Music Theory	Dyad Talk	16:15	1	0 - <5 (3)	00:03 (.31%)
	Music Theory	Large Group Game	11:00	3	0-9 (6)	00:19 (2.88%)
3			-	0	0 (0)	0 (0%)
Reading/Writing IEP Opportunities						
1, 2, 3	N/A	N/A	N/A	N/A	N/A	N/A

Table 7 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Reading/Talking IEP Opportunities						
1	Music Theory	Whole Class Talk/Listen	18:38	1	0-18:38 (18:38)	18:38 (100%)
	Music Theory	Dyad Talk	00:56	1	0-56 (56)	00:56 (100%)
	Music Theory	Whole Class Talk/Listen	1:07	1	0-1:07 (1:07)	1:07 (100%)
2	Music Theory	Dyad Talk	1:20	1	0-1:20 (1:20)	1:20 (100%)
3	N/A	N/A	N/A	N/A	N/A	N/A
Verbal/Nonverbal Correct						
1	Music Theory	Whole Class Talk/Listen	18:38	18	-	-
	Music Theory	Whole Class Talk/Listen	1:07	2	-	-
	Music Theory	Whole Class Worksheet	16:52	1	-	-
2			-	0	-	-
3	Playing Instruments	Whole Class Music Making	15:05	2	-	-
	Singing & Playing	Whole Class Music Making	20:19	5	-	-
Verbal/Nonverbal Approximate						
1	Music Theory	Whole Class Talk/Listen	18:38	1	-	-
2, 3			-	0	-	-
Verbal/Nonverbal Incorrect						
1	Music Theory	Whole Class Talk/Listen	18:38	1	-	-
2	Music Theory	Whole Class Talk/Listen	8:38	1	-	-
3	Singing & Playing	Whole Class Music Making	20:19	1	-	-
Music Performance Correct						
1, 2	N/A	N/A	N/A	N/A	N/A	N/A

Table 7 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Music Performance Correct						
3	Singing & Playing	Whole Class Music Making	20:20	1	0-20 (20)	00:20 (1.64%)
Off-Camera						
1			43:10	10	0-10 (3)	00:32 (1.24%)
2			44:15	14	0-1:34 (18)	4:07 (9.31%)
3			43:18	12	0-4:12 (27)	5:26 (12.53%)

Note. Total duration for session 1 = 43:10, Total duration for session 2 = 44:15, Total duration for session 3 = 43:18. N/A = no opportunity for a response.

Table 8

Martin's (3rd-grade) behavior by session

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
			Off-Task			
1	-	Non-instructional	1:36	1	0 - <5 (4)	00:04 (3.85%)
	Music Theory	Whole Class Talk/Listen	18:38	14	0 - <5 (2)	00:30 (2.67%)
	Music Theory	Dyad Talk	00:56	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	1:07	0	0 (0)	0 (0%)
	-	Non-instructional	2:19	0	0 (0)	0 (0%)
	Music Theory	Whole Class Worksheet	16:52	7	0-17 (6)	00:45 (4.45%)
	-	Non-instructional	1:39	1	0 - <5 (4)	00:04 (4.04%)
2	-	Non-instructional	00:40	1	0-8 (8)	00:08 (19.5%)
	Music Theory	Dyad Talk	1:20	1	0-33 (33)	00:33 (40.63%)
	-	Non-instructional	00:30	1	0-16 (16)	00:16 (52.33%)
	Music Theory	Whole Class Talk/Listen	8:38	22	0-20 (11)	03:54 (45.25%)
	-	Non-instructional	3:17	7	0-11 (8)	00:58 (29.29%)
	Music Theory	Dyad Talk	16:15	6	0-9 (5)	00:30 (3.10%)
	-	Non-instructional	1:20	1	0 - <5 (3)	00:03 (3.88%)
	Music Theory	Large Group Game	11:00	12	0-13 (5)	00:53 (8.02%)
	-	Non-instructional	1:15	0	0 (0)	0 (0%)
3	-	Non-instructional	5:15	0	0 (0)	0 (0%)
	Playing Instruments	Whole Class Music Making	15:05	17	0-14 (5)	1:15 (8.25%)

Table 8 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
	Singing & Playing	Whole Class Music Making	20:20	41	0-8 (3)	1:48 (8.82%)
	-	Non-instructional	2:38	4	0 - <5 (3)	00:13 (8.35%)
Assigned Peer Interactions						
1	Music Theory	Dyad Talk	00:56	3	0-19 (7)	00:22 (38.39%)
2	Music Theory	Dyad Talk	1:20	1	0-24 (24)	00:24 (30.38%)
	-	Non-instructional	1:20	2	0-2 (2)	00:04 (5.13%)
	Music Theory	Dyad Talk	11:00	29	0-29 (5)	2:37 (23.85%)
	-	Non-instructional	1:15	1	0-8 (8)	00:08 (10.67%)
3	Singing & Playing	Whole Class Music Making	20:19	1	0 - <5 (3)	00:03 (0.21%)
Unassigned Peer Interactions						
1	Music Theory	Whole Class Worksheet	16:52	21	0-8 (3)	1:03 (6.22%)
2	Music Theory	Large Group Game	16:15	15	0-7 (2)	00:30 (3.06%)
3	-	Non-instructional	5:15	1	0 - <5 (3)	00:03 (0.86%)
	Playing Instruments	Whole Class Music Making	15:05	15	0 - <5 (2)	00:31 (3.37%)
	Singing & Playing	Whole Class Music Making	20:19	11	0-8 (3)	00:31 (2.54%)
	-	Non-instructional	2:38	21	0-8 (3)	1:03 (6.22%)
Off-task Peer Interactions						
1			-	0	0 (0)	0 (0%)
2	Music Theory	Large Group Game	16:15	20	0-8 (4)	01:17 (7.93%)
	Music Theory	Dyad Talk	11:00	2	0-11 (7)	00:14 (2.17%)
3	Playing Instruments	Whole Class Music Making	15:05	1	0 - <5 (3)	00:03 (0.28%)

Table 8 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-task Peer Interactions						
	Singing & Playing	Whole Class Music Making	20:19	1	0 - <5 (3)	00:03 (0.28%)
Reading/Writing IEP Opportunities						
1, 2, 3	N/A	N/A	N/A	N/A	N/A	N/A
Reading/Talking IEP Opportunities						
1	Music Theory	Whole Class Talk/Listen	18:38	1	0-18:38 (18:38)	18:38 (100%)
	Music Theory	Dyad Talk	00:56	1	0-56 (56)	00:56 (100%)
	Music Theory	Whole Class Talk/Listen	1:07	1	0-1:07 (1:07)	1:07 (100%)
	Music Theory	Whole Class Worksheet	16:52	1	0-16:52 (16:52)	16:52 (100%)
2	Music Theory	Dyad Talk	1:20	1	0-1:20 (1:20)	01:20 (100%)
3	N/A	N/A	N/A	N/A	N/A	N/A
Verbal/Nonverbal Correct						
1	Music Theory	Whole Class Talk/Listen	18:38	1	-	-
2			-	0	-	-
3	Playing Instruments	Whole Class Music Making	15:05	5	-	-
	Singing & Playing	Whole Class Music Making	20:19	5	-	-
Verbal/Nonverbal Incorrect						
1	Music Theory	Whole Class Talk/Listen	18:38	1	-	-
2			-	0	-	-
3	Playing Instruments	Whole Class Music Making	15:05	1	-	-
	Singing & Playing	Whole Class Music Making	20:19	1	-	-

Table 8 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Camera						
1			43:10	119	0-49 (10)	20:08 (46.61%)
2			44:15	63	0-54 (11)	11:21 (25.65%)
3			43:18	15	0-02:53 (16)	03:53.3 (8.98%)

Note. Total duration for session 1 = 43:10, Total duration for session 2 = 44:15, Total duration for session 3 = 43:18. N/A = no opportunity for a response.

Table 9

Peter's (3rd-grade) behavior by session

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
1	-	Non-instructional	2:05	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	15:55	44	0-36 (3)	2:28 (15.5%)
	Music Theory	Dyad Talk	00:47	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	1:15	1	0-6 (6)	00:06 (8%)
	-	Non-instructional	00:18	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	1:19	5	0-22 (6)	00:32 (40.51%)
	-	Non-instructional	3:21	14	0-12 (4)	00:54 (26.87%)
	Music Theory	Whole Class Worksheet	15:01	26	0-54 (11)	4:56 (32.85%)
	-	Non-instructional	1:19	1	0-6 (6)	00:06 (7.59%)
2	Music Theory	Dyad Talk	00:38	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	4:14	5	0-22 (14)	1:08 (26.77%)
	Music Theory/Singing	Whole Class Music Making	00:20	1	0 - <5 (4)	00:04 (21.50%)
	Music Theory	Whole Class Talk/Listen	1:45	1	0 - <5 (1)	00:01 (0.67%)
	-	Non-instructional	3:01	0	0 (0)	0 (0%)
	Music Theory	Large Group Game	9:15	1	0 - <5 (1)	00:01 (0.14%)
	-	Non-instructional	1:30	2	0-6 (6)	00:11 (12.22%)
	Music Theory	Dyad Talk	11:35	11	0-31 (18)	3:14 (27.91%)
	-	Non-instructional	00:48	0	0 (0)	0 (0%)

Table 9 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
3	-	Non-instructional	3:32	1	0 - <5 (2)	00:02 (0.85%)
	Playing Instruments	Whole Class Music Making	12:39	9	0-15 (5)	00:46 (6.10%)
	Singing & Playing	Whole Class Music Making	21:56	48	0-32 (6)	4:30 (20.54%)
	-	Non-instructional	3:58	6	0-15 (6)	00:36 (15.04%)
Assigned Peer Interactions						
1	Music Theory	Dyad Talk	00:47	1	0-47 (47)	00:47 (100%)
2	Music Theory	Dyad Talk	00:38	1	0-35 (35)	00:35 (92.37%)
	Music Theory	Dyad Talk	11:35	15	0-2:02 (20)	4:46 (41.18%)
	-	Non-instructional	00:48	1	0 - <5 (2)	00:02 (3.75%)
3	N/A	N/A	N/A	N/A	N/A	N/A
Unassigned Peer Interactions						
1	-	Non-instructional	3:21	1	0-8 (8)	00:08 (3.98%)
	Music Theory	Whole Class Worksheet	15:01	19	0-36 (9)	2:49 (18.76%)
2	-	Non-instructional	3:01	1	0 - <5 (1)	00:01 (0.55%)
	Music Theory	Dyad Talk	11:35	3	0-24 (12)	00:37 (5.35%)
3	Playing Instruments	Whole Class Music Making	12:39	5	0-13 (4)	00:21 (2.81%)
	Singing & Playing	Whole Class Music Making	21:56	3	0 - <5 (2)	00:07 (0.50%)
	-	Non-instructional	3:58	6	0 - <5 (2)	00:11 (4.62%)
Off-task Peer Interactions						
1	Music Theory	Whole Class Talk/Listen	15:55	5	0-13 (6)	00:31 (3.25%)
	Music Theory	Whole Class Worksheet	15:01	1	0 - <5 (2)	00:02 (.22%)

Table 9 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-task Peer Interactions						
2	Music Theory	Large Group Game	9:15	13	0-9 (4)	00:56 (10.11%)
3			-	0	0 (0)	0 (0%)
Reading/Writing IEP Opportunities						
1	Music Theory	Whole Class Worksheet	15:01	1	15:01 (100%)	0-15:01 (15:01)
2, 3	N/A	N/A	N/A	N/A	N/A	N/A
Reading/Talking IEP Opportunities						
1	Music Theory	Whole Class Talk/Listen	15:55	1	0-15:55 (15:55)	15:55 (100%)
2	Music Theory	Dyad Talk	00:38	1	0-38 (38)	00:38 (100%)
	Music Theory	Dyad Talk	11:35	1	0-11:35 (11:35)	11:35 (100%)
3	N/A	N/A	N/A	N/A	N/A	N/A
Verbal/Nonverbal Correct						
1	Music Theory	Whole Class Talk/Listen	15:55	1	-	-
	Music Theory	Whole Class Talk/Listen	1:15	1	-	-
2			-	0	-	-
3	Playing Instruments	Whole Class Music Making	12:39	4	-	-
	Singing & Playing	Whole Class Music Making	21:56	6	-	-
Verbal/Nonverbal Incorrect						
1			-	0	-	-
2			-	0	-	-
3	Playing Instruments	Whole Class Music Making	12:39	2	-	-
	Singing & Playing	Whole Class Music Making	21:56	2	-	-

Table 9 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Music Performance Correct						
1, 2	N/A	N/A	N/A	N/A	N/A	N/A
3	Singing & Playing	Whole Class Music Making	21:56	1	20 (20)	00:20 (1.49%)
Off-Camera						
1			41:21	20	0-2:27 (16)	5:12 (12.57%)
2			33:09	11	1-1:50 (23)	4:12 (12.68%)
3			42:05	33	0-3:09 (11)	6:08 (14.56%)

Note. Total duration for session 1 = 41:21, Total duration for session 2 = 33:09, Total duration for session 3 = 42:05. N/A = no opportunity for a response.

Table 10

Rick's (3rd-grade) behavior by session

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
1	-	Non-instructional	2:05	2	0 - <5 (3)	00:06 (4.8%)
	Music Theory	Whole Class Talk/Listen	15:55	2	0 - <5 (1)	00:03 (.31%)
	Music Theory	Dyad Talk	00:47	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	1:15	0	0 (0)	0 (0%)
	-	Non-instructional	00:18	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	1:19	2	0 - <5 (2)	00:04 (5.06%)
	-	Non-instructional	3:21	4	0 - <5 (3)	00:13 (6.47%)
	Music Theory	Whole Class Worksheet	15:01	8	0-25 (10)	1:18 (8.66%)
	-	Non-instructional	1:19	3	0 - <5 (2)	00:07 (8.75%)
2	Music Theory	Dyad Talk	00:38	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	4:14	2	0 - <5 (2)	00:05 (1.97%)
	Music Theory/Singing	Whole Class Music Making	00:20	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	1:45	0	0 (0)	0 (0%)
	-	Non-instructional	3:01	1	0 - <5 (2)	00:02 (1.1%)
	Music Theory	Dyad Talk	9:15	0	0 (0)	0 (0%)
	-	Non-instructional	1:30	0	0 (0)	0 (0%)
	Music Theory	Large Group Game	11:35	8	0-6 (3)	00:23 (3.31%)
	-	Non-instructional	00:48	1	0 - <5 (4)	00:04 (8.33%)

Table 10 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
3	-	Non-instructional	3:32	2	0-7 (4)	00:08 (3.77%)
	Playing Instruments	Whole Class Music Making	12:39	19	0-17 (5)	1:27 (11.46%)
	Singing & Playing	Whole Class Music Making	21:56	34	0-12 (5)	2:52 (13.07%)
	-	Non-instructional	3:58	4	0-19 (11)	00:45 (18.91%)
Assigned Peer Interactions						
1	Music Theory	Dyad Talk	00:47	1	0-29 (29)	00:29 (61.7%)
2	Music Theory	Dyad Talk	00:38	1	0-34 (34)	00:34 (89.47%)
	Music Theory	Dyad Talk	9:15	9	0-1:30 (38)	5:40 (61.26%)
	-	Non-instructional	1:31	1	0-6 (6)	00:06 (6.59%)
3	N/A	N/A	N/A	N/A	N/A	N/A
Unassigned Peer Interactions						
1	Music Theory	Whole Class Worksheet	15:01	6	0-8 (4)	00:25 (3.22%)
2	Music Theory	Large Group Game	11:35	1	0 - <5 (2)	00:02 (.29%)
3	Playing Instruments	Whole Class Music Making	12:29	1	0 - <5 (1)	00:01 (.13%)
Off-task Peer Interactions						
1	-	Non-instructional	03:21	4	0-29 (9)	00:37 (18.41%)
2	-	Non-instructional	00:48	1	0 - <5 (1)	00:01 (2.08%)
3			-	0	0 (0)	0 (0%)
Reading/Talking IEP Opportunities						
1	Music Theory	Dyad Talk	00:47	1	0-47 (47)	00:47 (100%)
2	Music Theory	Dyad Talk	00:38	1	0-38 (38)	00:38 (100%)

Table 10 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
3	N/A	N/A	N/A	N/A	N/A	N/A
Verbal/Nonverbal Correct						
1	Music Theory	Whole Class Talk/Listen	15:55	5	-	-
2	Music Theory	Whole Class Talk/Listen	4:14	2	-	-
	Music Theory	Dyad Talk	9:15	3	-	-
	Music Theory	Whole Class Talk/Listen	1:45	3	-	-
3	Singing & Playing	Whole Class Music Making	21:56	3	-	-
	-	Non-instructional	3:32	1	-	-
Verbal/Nonverbal Approximate						
1	Music Theory	Whole Class Talk/Listen	1:19	2	-	-
2	Music Theory	Whole Class Talk/Listen	4:14	1	-	-
3			-	0	-	-
Verbal/Nonverbal Incorrect						
1			-	0	-	-
2	Music Theory	Whole Class Talk/Listen	4:14	1	-	-
	Music Theory	Dyad Talk	9:15	1	-	-
3	Singing & Playing	Whole Class Music Making	21:56	3	-	-
Off-Camera						
1			41:21	22	0-56 (8)	2:59 (7.2%)
2			33:09	22	0-59 (9)	3:24 (10.28%)
3			42:05	19	0-2:32 (13)	4:04 (9.66%)

Note. Total duration for session 1 = 41:21, Total duration for session 2 = 33:09, Total duration for session 3 = 42:05. N/A = no opportunity for a response.

Table 11

Ray's (3rd-grade) behavior by session

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
1	-	Non-instructional	2:05	1	0 - <5 (3)	00:03 (2.4%)
	Music Theory	Whole Class Talk/Listen	15:55	29	0-13 (3)	1:33 (9.74%)
	Music Theory	Dyad Talk	00:47	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	1:15	2	0 - <5 (2)	00:03 (4%)
	-	Non-instructional	00:18	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	1:19	6	0-8 (4)	00:26 (32.91%)
	-	Non-instructional	3:21	9	0-35 (11)	1:35 (47.26%)
	Music Theory	Whole Class Worksheet	15:01	9	0-1:09 (22)	3:17 (21.86%)
	-	Non-instructional	1:19	0	0 (0)	0 (0%)
2	Music Theory	Dyad Talk	00:38	2	0-25 (14)	00:28 (73.68%)
	Music Theory	Whole Class Talk/Listen	4:14	4	0-7 (3)	00:11 (42.91%)
	Music Theory/Singing	Whole Class Music Making	00:20	0	0 (0)	0 (0%)
	Music Theory	Whole Class Talk/Listen	1:45	2	0-10 (6)	00:11 (10.76%)
	-	Non-instructional	3:01	0	0 (0)	0 (0%)
	Music Theory	Dyad Talk	9:15	12	0-18 (6)	1:18 (14.00%)
	-	Non-instructional	1:30	0	0 (0)	0 (0%)
	Music Theory	Large Group Game	11:35	12	0-14 (4)	00:52 (7.51%)
	-	Non-instructional	00:48	0	0 (0)	0 (0%)

Table 11 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
3	-	Non-instructional	3:32	0	0 (0)	0 (0%)
	Playing Instruments	Whole Class Music Making	12:39	8	0 - <5 (2)	00:13 (1.75%)
	Singing & Playing	Whole Class Music Making	21:56	23	0-9 (3)	01:09 (5.23%)
	-	Non-instructional	3:58	1	0 - <5 (3)	00:03 (1.26%)
Assigned Peer Interactions						
1	Music Theory	Dyad Talk	00:47	1	0-29 (29)	00:29 (61.7%)
2	Music Theory	Dyad Talk	00:38	1	0 - <5 (3)	00:03 (8.95%)
	-	Non-instructional	3:01	2	0 - <5 (4)	00:09 (4.81%)
	Music Theory	Dyad Talk	11:35	12	0-01:09 (33)	06:33 (70.79%)
	-	Non-instructional	00:48	2	0 - <5 (4)	00:08 (8.67%)
3	N/A	N/A	N/A	N/A	N/A	N/A
Unassigned Peer Interactions						
1	Music Theory	Whole Class Worksheet	15:01	4	0-14 (7)	00:29 (3.22%)
2	Music Theory	Large Group Game	11:35	2	0 - <5 (2)	00:04 (0.56%)
3	Playing Instruments	Whole Class Music Making	12:39	13	0 - <5 (2)	00:29 (3.77%)
	Singing & Playing	Whole Class Music Making	21:56	1	0 - <5 (1)	00:01 (0.08%)
Off-task Peer Interactions						
1, 2, 3			-	0	0 (0)	00:00 (0%)
Reading/Talking IEP Opportunities						
1	Music Theory	Whole Class Talk/Listen	15:55	1	0-15:55 (15:55)	15:55 (100%)
	Music Theory	Dyad Talk	00:47	1	0-47 (47)	00:47 (100%)

Table 11 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Reading/Talking IEP Opportunities						
	Music Theory	Whole Class Talk/Listen	1:15	1	0-1:15 (1:15)	1:15 (100%)
2	Music Theory	Dyad Talk	00:38	1	0-38 (38)	00:38 (100%)
	Music Theory	Dyad Talk	9:15	1	0-9:15 (9:15)	9:15 (100%)
3	N/A	N/A	N/A	N/A	N/A	N/A
Verbal/Nonverbal Correct						
1			-	0	-	-
2	Music Theory	Large Group Game	11:35	2	-	-
3	Playing Instruments	Whole Class Music Making	12:39	4	-	-
	Singing & Playing	Whole Class Music Making	21:56	3	-	-
Verbal/Nonverbal Incorrect						
1			-	0	-	-
2			-	0	-	-
3	Singing & Playing	Whole Class Music Making	21:56	2	-	-
Off-Camera						
1			41:21	22	0-25 (11)	3:55 (9.47%)
2			33:09	15	0-01:02 (10)	2:27 (7.383%)
3			42:05	21	0-01:27 (10)	3:22 (7.982%)

Note. Total duration for session 1 = 41:21, Total duration for session 2 = 33:09, Total duration for session 3 = 42:05. N/A = no opportunity for a response.

Table 12

Adam's (4th-grade) behavior by session

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
1	Music Knowledge	Whole Class Talk/Listen	00:39	0	0 (0)	0 (0%)
	-	Non-instructional	00:39	0	0 (0)	0 (0%)
	Music Knowledge	Whole Class Talk/Listen	00:41	0	0 (0)	0 (0%)
	-	Non-instructional	4:45	3	0-33 (12)	00:37 (12.46%)
	Music Knowledge	Whole Class Worksheet	19:40	21	0-35 (12)	4:22 (22.17%)
	-	Non-instructional	3:04	1	0 - <5 (1)	00:01 (0.22%)
2	-	Non-instructional	2:34	5	0 - <5 (2)	00:12 (8.05%)
	Playing Instruments	Whole Class Music Making	11:41	6	0-12 (9)	00:52 (7.43%)
	Music Listening	Whole Class Talk/Listen	2:09	4	0-6 (3)	00:13 (9.69%)
	Music Listening	Dyad Talk	00:43	3	0-18 (9)	00:26 (61.16%)
	Music Listening	Whole Class Talk/Listen	3:47	11	0-6 (2)	00:26 (11.59%)
	Sing & Play	Whole Class Music Making	8:16	21	0-9 (3)	1:04 (12.9%)
	Music Listening	Whole Class Talk/Listen	4:04	0	0 (0)	0 (0%)
	Music Listening	Dyad Talk	00:52	4	0-16 (9)	00:35 (67.31%)
	Music Listening	Whole Class Talk/Listen	2:45	5	0 - <5 (2)	00:11 (6.61%)
	-	Non-instructional	00:41	2	0-8 (8)	00:15 (36.59%)
3	Playing Instruments	Whole Class Music Making	12:16	25	0-23 (5)	2:18 (18.68%)
	-	Non-instructional	5:04	3	0 - <5 (2)	00:05 (1.78%)

Table 12 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
	Playing Instruments	Whole Class Music Making	20:00	50	0-9 (3)	2:30 (12.46%)
	-	Non-instructional	2:48	5	0 - <5 (2)	00:08 (4.99%)
Assigned Peer Interactions						
1	N/A	N/A	N/A	N/A	N/A	N/A
2	Music Listening	Dyad Talk	00:43	0	0	0
	Music Listening	Dyad Talk	00:50	0	0	0
3	N/A	N/A	N/A	N/A	N/A	N/A
Unassigned Peer Interactions						
1	Music Knowledge	Whole Class Individual	19:40	8	0-41 (12)	1:36 (8.11%)
	-	Non-instructional	4:45	3	0 - <5 (3)	00:10 (3.65%)
2			-	0	0 (0)	0 (0%)
3	Playing Instruments	Whole Class Music Making	20:00	2	0 - <5 (1)	00:02 (0.18%)
Off-task Peer Interactions						
1, 2			-	0	0 (0)	0 (0%)
3	Playing Instruments	Whole Class Music Making	12:16	1	0 - <5 (5)	00:05 (0.64%)
	-	Non-instructional	5:04	2	0-11 (7)	00:13 (4.34%)
Reading/Writing IEP Opportunities						
1	Music Knowledge	Whole Class Worksheet	19:40	1	0-19:40 (19:40	19:40 (100%)
2, 3,	N/A	N/A	N/A	N/A	N/A	N/A
Reading/Talking IEP Opportunities						
1, 2, 3	N/A	N/A	N/A	N/A	N/A	N/A

Table 12 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Verbal/Nonverbal Correct						
1, 2, 3			-	0	-	-
Verbal/Nonverbal Incorrect						
1, 2, 3			-	0	-	-
Off-Camera						
1			29:30	32	1-11 (3)	1:22 (4.62%)
2			37:34	37	0-14 (2)	1:13 (3.23%)
3			40:08	10	0 - <5 (1)	00:13 (0.55%)

Note. Total duration session 1 = 29:30, Total duration session 2 = 37:34, Total duration session 3 = 40:08. N/A = no opportunity for a response.

Table 13

Raul's (4th-grade) behavior by session

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
1	Music Knowledge	Whole Class Talk/Listen	00:39	2	0-14 (8)	00:15 (38.97%)
	-	Non-instructional	00:39	0	0 (0)	0 (0%)
	Music Knowledge	Whole Class Talk/Listen	00:41	0	0 (0)	0 (0%)
	-	Non-instructional	4:45	6	0-22 (7)	00:40 (14.04%)
	Music Knowledge	Whole Class Worksheet	19:40	35	0-11 (4)	2:07 (12.47%)
	-	Non-instructional	3:04	5	0 - <5 (2)	00:11 (5.71%)
2	-	Non-instructional	2:34	1	0-8 (8)	00:08 (5.13%)
	Playing Instruments	Whole Class Music Making	11:41	1	0-3 (3)	00:03 (0.49%)
	Music Listening	Whole Class Talk/Listen	2:09	0	0 (0)	0 (0%)
	Music Listening	Dyad Talk	00:43	0	0 (0)	0 (0%)
	Music Listening	Whole Class Talk/Listen	3:47	0	0 (0)	0 (0%)
	Sing & Play	Whole Class Music Making	8:16	1	0-11 (11)	00:11 (2.12%)
	Music Listening	Whole Class Talk/Listen	4:04	0	0 (0)	0 (0%)
	Music Listening	Dyad Talk	00:52	0	0 (0)	0 (0%)
	Music Listening	Whole Class Talk/Listen	2:45	0	0 (0)	0 (0%)
	-	Non-instructional	00:41	0	0 (0)	0 (0%)
3	Playing Instruments	Whole Class Music Making	12:16	9	0 - <5 (4)	00:38 (5.18%)
	-	Non-instructional	5:04	0	0 (0)	0 (0%)

Table 13 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
	Playing Instruments	Whole Class Music Making	20:00	71	0-22 (3)	4:05 (20.45%)
	-	Non-instructional	2:48	3	0-11 (5)	00:15 (8.67%)
Assigned Peer Interactions						
1	N/A	N/A	N/A	N/A	N/A	N/A
2	Music Listening	Dyad Talk	00:43	Off-Camera	-	-
	Music Listening	Dyad Talk	00:52	Off-Camera	-	-
3	N/A	N/A	N/A	N/A	N/A	N/A
Unassigned Peer Interactions						
1	Music Knowledge	Whole Class Worksheet	19:40	7	0-14 (6)	00:39 (3.31%)
2, 3			-	0	0 (0)	0 (0%)
Off-task Peer Interactions						
1, 2, 3			-	0	0 (0)	0 (0%)
Reading/Writing IEP Opportunities						
1	Music Knowledge	Whole Class Worksheet	19:40	1	0-19:40 (19:40	19:40 (100%)
2, 3,	N/A	N/A	N/A	N/A	N/A	N/A
Reading/Talking IEP Opportunities						
1, 2, 3	N/A	N/A	N/A	N/A	N/A	N/A
Verbal/Nonverbal Correct						
1			-	0	-	-
2	Playing Instruments	Whole Class Music Making	11:41	4	-	-
3	Playing Instruments	Whole Class Music Making	12:16	3	-	-

Table 13 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Verbal/Nonverbal Incorrect						
1			-	0	-	-
2	Playing Instruments	Whole Class Music Making	11:41	1	-	-
	Music Listening	Whole Class Talk/Listen	3:47	1	-	-
3	Playing Instruments	Whole Class Music Making	12:16	1	-	-
Music Performance Correct						
1	N/A	N/A	N/A	N/A	N/A	N/A
2	Playing Instruments	Whole Class Music Making	11:41	2	7-10 (9)	00:18 (2.58%)
3	Playing Instruments	Whole Class Music Making	12:16	0	0 (0)	0 (0%)
Music Performance Approximate						
1	N/A	N/A	N/A	N/A	N/A	N/A
2	Playing Instruments	Whole Class Music Making	11:41	6	2-19 (9)	00:56 (8.37%)
3	Playing Instruments	Whole Class Music Making	12:16	3	2-26 (17)	00:50 (6.38%)
Off-Camera						
1			29:30	46	0-1:03 (00:09)	6:44 (22.82%)
2			37:34	72	0-31 (00:06)	7:11 (19.12%)
3			40:08	33	0-29 (00:05)	2:53 (7.178%)

Note. Total duration session 1 = 29:30, Total duration session 2 = 37:34, Total duration session 3 = 40:08. N/A = no opportunity for a response.

Table 14

Kristen's (4th-grade) behavior by session

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
1	-	Non-instructional	00:25	0	0 (0)	0 (0%)
	Playing Instruments	Whole Class Music Making	00:42	0	0 (0)	0 (0%)
	-	Non-instructional	00:59	1	0 - <5 (3)	00:03 (5.08%)
	Music Knowledge	Whole Class Talk/Listen	2:03	6	0-10 (6)	00:35 (28.46%)
	-	Non-instructional	5:18	9	0-53 (15)	2:13 (41.82%)
	Music Knowledge	Whole Class Worksheet	23:30	2	0-13 (10)	00:20 (1.42%)
	-	Non-instructional	1:27	0	0 (0)	0 (0%)
	Music Knowledge	Whole Class Talk/Listen	3:02	8	0 - <5 (2)	00:19 (10.44%)
	-	Non-instructional	4:09	7	0-36 (10)	1:12 (28.92%)
2	-	Non-instructional	1:34	0	0 (0)	0 (0%)
	Music Listening	Whole Class Talk/Listen	3:10	0	0 (0)	0 (0%)
	Music Listening	Dyad Talk	00:25	0	0 (0)	0 (0%)
	Music Listening	Whole Class Talk/Listen	2:39	0	0 (0)	0 (0%)
	Singing and Playing	Whole Class Music Making	10:10	10	0-11 (7)	1:17 (12.54%)
	Music Listening	Whole Class Talk/Listen	10:58	20	0-27 (7)	2:24 (21.91%)
	-	Non-instructional	1:02	0	0 (0)	0 (0%)
	Conducting	Whole Class Music Making	3:02	0	0 (0)	0 (0%)
	-	Non-instructional	1:48	0	0 (0)	0 (0%)

Table 14 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Task						
	Singing	Whole Class Music Making	2:03	0	0 (0)	0 (0%)
	-	Non-instructional	00:27	0	0 (0)	0 (0%)
3	-	Non-instructional	5:46	0	0 (0)	0 (0%)
	Music Knowledge	Whole Class Talk/Listen	8:49	0	0 (0)	0 (0%)
	-	Non-instructional	2:19	0	0 (0)	0 (0%)
	Music Listening	Whole Class Talk/Listen	00:57	0	0 (0)	0 (0%)
	Sing & Play	Whole Class Music Making	1:50	0	0 (0)	0 (0%)
	-	Non-instructional	00:36	0	0 (0)	0 (0%)
	Music Listening	Whole Class Talk/Listen	00:49	0	0 (0)	0 (0%)
	Singing	Whole Class Music Making	2:28	0	0 (0)	0 (0%)
	Playing Instruments	Whole Class Music Making	11:58	6	0-45 (19)	1:57 (6.28%)
	-	Non-instructional	00:26	0	0 (0)	0 (0%)
Assigned Peer Interactions						
1	N/A	N/A	N/A	N/A	N/A	N/A
2	Music Listening	Dyad Talk	00:25	1	0-25 (25)	00:25 (100%)
3	-	Non-instructional	5:46	1	0-46 (46)	00:46 (13.20%)
Unassigned Peer Interactions						
1	Music Knowledge	Whole Class Worksheet	23:30	31	0-2:30 (16)	8:07 (34.54%)
2			-	0	0 (0)	0 (0%)
3	Music Knowledge	Whole Class Talk/Listen	8:49	2	0 - <5 (2)	00:03 (0.64%)

Table 14 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-task Peer Interactions						
1	-	Non-instructional	1:27	1	0-9 (9)	00:09 (9.2%)
2			-	0	0 (0)	0 (0%)
3	Playing Instruments	Whole Class Music Making	11:58	1	0-3 (3)	00:03 (0.39%)
Reading/Writing IEP Opportunities						
1	Music Knowledge	Whole Class Worksheet	23:30	1	23:30 (23:30)	23:30 (100%)
2, 3,	N/A	N/A	N/A	N/A	N/A	N/A
Reading/Talking IEP Opportunities						
1, 2, 3	N/A	N/A	N/A	N/A	N/A	N/A
Verbal/Nonverbal Correct						
1	Music Knowledge	Whole Class Talk/Listen	2:03	5	-	-
2			-	0	-	-
3	Music Knowledge	Whole Class Talk/Listen	8:49	4	-	-
Verbal/Nonverbal Incorrect						
1	Music Listening	Whole Class Talk/Listen	2:50	1	-	-
	Playing Instruments	Whole Class Music Making	14:40	1	-	-
2	Music Listening	Whole Class Talk/Listen	2:39	1	-	-
3	Music Knowledge	Whole Class Talk/Listen	8:49	4	-	-
Off-Camera						
1			41:40	32	0-20 (5)	2:53 (6.93%)
2			37:19	37	0-57 (6)	3:41 (9.86%)

Table 14 continued

Session	Music Activity	Instructional Format	Duration of Activity	Frequency	Range (mean) in secs	Total Duration (percentage of activity)
Off-Camera						
3			36:02	0	0 (0)	0 (0%)

Note. Total duration session 1 = 41:40, Total duration session 2 = 37:19, Total duration session 3 = 36:02. N/A = no opportunity for a response.

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