THE EFFECT OF MUSIC THERAPY INTERVENTIONS ON THE DEVELOPMENT OF RESILIENCE IN ELEMENTARY SCHOOL CHILDREN OF VARYING PRIMARY LANGUAGE BACKGROUNDS

by

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A thesis submitted to the faculty of Radford University in partial fulfillment of the requirements for the degree of Master of Science in the Department of Music

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April 2018

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ABSTRACT

The majority of Dual Language Learners (DLLs) in American public schools are immigrants of Hispanic/Latino descent. Research has shown that these students face a variety of unique challenges to physical and psychological wellbeing, and that the negative effects of these challenges may be tempered by improved resilience in a multicultural educational environment. This quasi-experimental, exploratory study examined the effect of group music therapy interventions on the developing resilience of multicultural subjects. Seven elementary school students (both dual language learners and native English speakers) were individually tested on several factors of resilience as measured by the Child and Youth Resilience Measure (CYRM-26) (Ungar & Liebenberg, 2011). All subjects participated in six group music therapy sessions over the course of 11 weeks; interventions were designed to promote the development of personal skills, to increase subject perception of peer support, and to improve subjects' sense of belonging in educational and cultural contexts. Subjects were retested individually following the final session, and results indicated statistically significant increases in overall resilience for the group as a whole. Significant increases were also noted in subject perception of overall context and sense of belonging, sense of belonging in cultural contexts, and in the psychological caregiving subscale cluster. This evidence suggests that targeted group music therapy interventions may be effective for increasing overall resilience and contributing factors thereof in elementary school children of varying primary language backgrounds.

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TABLE OF CONTENTS

Abstractii
Table of Contentsiii
List of Tables and Figuresiv
Chapter 1. Introduction1
Chapter 2. Review of Literature
Chapter 3. Method.25Subjects and Setting.25Experimental Design.25Instrument.26Group Formation.28Procedure.28
Chapter 4. Results
Chapter 5. Discussion
References
Appendices.56Appendix A – CYRM-26 Permissions.56Appendix B – CYRM-26 English Version.57Appendix C – CYRM-26 Spanish Translation.60Appendix D – Consent Form: English.63Appendix E– Consent Form: Spanish.65Appendix F– TREND Statement Checklist.67Appendix G – IRB Approval Letter.70Appendix H – Hello Song.71Appendix I – Interventions Used.72Appendix J – Goodbye Song.75

LIST OF TABLES AND FIGURES

Table 1 – The Use of Music Therapy with DLLs in U.S. Schools	20
Table 2 – Goals and Objectives.	32
Table 3 – Mean Experimental CYRM-26 Pretest and Posttest Scores	
Figure 1 – Balance Scale Model of Resilience	10
Figure 2 – TREND Flowchart	

CHAPTER 1

Introduction

The majority of Dual Language Learners (DLLs) in American public schools are immigrants of Hispanic/Latino descent. Statistically, these students face a wide variety of unique challenges including academic risk, acculturation, poor physical health, and discrimination in the educational environment. For this reason, it is imperative that Hispanic/Latino DLLs are provided with opportunities to effectively seek and seize both internal and external resources that will allow for success despite these challenges. These opportunities are equally important for the English-speaking students in the environments to which DLLs are introduced, as they promote commonality through shared experience and encourage cross-cultural collaboration toward a common goal.

Prior to the implementation of this study, the researcher facilitated a non-experimental music therapy group with Spanish-speaking DLLs and their English-speaking peers in a firstgrade classroom in rural, southwestern Virginia in an effort to determine the impact of music therapy interventions on the social interaction of each participant. Session notes and observations anecdotally indicated increases in cross-cultural socialization, positive social behaviors, primary and secondary language skills, and instances of positive statements about self and others. Because the presence of these skills and behaviors can be indicative of resilience in children (Alvord & Grados, 2005; National Scientific Council on the Developing Child, 2015), these results suggested that music therapy sessions may provide opportunities for the development of an increased capacity to seek and take advantage of resources for children of varied cultural backgrounds.

The tendency of an individual to seek, identify, seize, and employ both internal and external resources leading to a more positive outcome in the face of varied adversities, as well as the potential and drive of that individual to make changes (governmental, environmental, situational, etc.) that affect both the nature and intensity of future hardships, is called resilience. The researcher developed this quasi-experimental, exploratory study in an attempt to quantify the potential effects of music therapy interventions on the indicators of resilience measured by the 26-item Child and Youth Resilience Measure (CYRM-26) (Ungar & Liebenberg, 2011).

CHAPTER 2

Review of Literature

English Language Learning

Over 11 million children in the United States are considered DLLs. Defined as "children ages eight and under with at least one parent who speaks a language other than English at home" (Park, O Toole, & Katsiaficas, 2017, p. 1), DLLs represent 32% of the country's young child population. This growing presence has introduced the need for language assistance programs to ensure that DLLs "attain English proficiency and meet the same academic content and achievement standards" (National Center for Education Statistics, 2017, para. 1) as their English-proficient peers. The presence and nature of these programs vary by state, and range from fully-immersive English study to specialized small-group instruction.

In Alaska, California, Connecticut, Illinois, New Jersey, New York, Texas, Washington, and Wisconsin, schools or districts are required to implement fully bilingual educational programs after reaching a certain level of DLL enrollment (Park et al., 2017). These programs provide instruction in each student's home language, and lead to improved English language acquisition and academic success for those enrolled (National Academies of Sciences, Engineering, and Medicine, 2017). Arizona, Massachusetts, and Tennessee prohibit bilingual education programs by law, while South Carolina explicitly requires that pre-Kindergarten classes be taught in English. Other states present no legal obligation, providing schools and districts with the opportunity to choose the level of immersion utilized in the teaching of DLLs (Park et al., 2017).

In school systems that do not utilize bilingual education, English for Speakers of Other Languages (ESOL) programs provide supplemental instruction to those classified as limited-English proficient (LEP). LEP students are "individuals who do not speak English as their

primary language and who have a limited ability to read, speak, write, or understand English" (United States Department of Justice, 2016, para. 1). These students receive small-group instruction and in-class assistance for math and sciences through the intervention of a certified ESOL instructor.

While students enrolled in ESOL programs are provided with specialized attention, they remain subject to the same academic benchmarks and national testing standards as their English-speaking peers. Wainer (2004) discussed that modern schools are not sufficiently equipped to help students meet these standards. Due to the time limitations of the typical American school day, supplemental instruction often takes place during DLLs' regularly scheduled nonacademic elective courses, causing a reduction in opportunities for social interaction in extracurricular settings (Abril, 2003). DLLs who are classified as LEP often have difficulty interacting with peers verbally in the classroom; therefore, the removal of these children from activity-based/play-based elective courses decreases their opportunities to develop social relationships with English-speaking classmates.

Children in Immigrant Families

The vast majority of DLLs are Children in Immigrant Families (CIF), defined as "children who are either born outside of the U.S. (immigrant children) or are U.S. citizens and have at least one parent born outside of the U.S." (Linton, Choi, & Mendoza, 2016, p. 116). Soon to represent one in three U.S. children, CIF are the fastest-growing segment of the country's population (Passel & Cohn, 2008). This has led experts to predict that "immigrants and their U.S.-born children will generate almost all growth in the young adult population and nearly all growth of the nation's labor force" over the next 40 years (Linton et al., 2016, p. 116). These

data point to an undeniable need for helping professionals, including those within the education system, to realize the needs of CIF in professional training, practice, and continuing education.

Due in part to a 2011 surge in immigration from Guatemala, El Salvador, Honduras, and Mexico, the population of CIF in the U.S. is predominately Latin American (Linton et al., 2016). Of all students enrolled in U.S. language assistance programs, more than 71% come from Spanish-speaking homes (Ruiz Soto, Hooker, & Batalova, 2015). In all but five states (Maine, Vermont, Montana, Hawaii, and Alaska), Spanish is the number one language spoken in the homes of DLLs (United States Department of Education, 2015). Schunk (1999) observed that children of this cultural background often "find their successes defined by their language abilities or limitations" (p. 110). Because perceived personal success is a key aspect in the development of a strong academic presence (Robinson, Keogh, & Kusuma-Powell, 2000), it is imperative that these students are provided with the means to improve their functional English-speaking skills and to develop confidence regarding their own personal success. Enrollment in some form of language assistance program is key, as is the maintenance of opportunities to develop confidence through social interaction in the learning environment.

Resilience

The investigation of resilience, beginning with the examination of unique personality traits as an indicator of high performance in underprivileged children, has long focused on the inherent ability of an individual to compensate for his or her own disadvantaged circumstances (Masten, 2007). Thus, in the early years of resilience research, the individual was tasked with utilizing purely internal resources to overcome adversity. Over the past five decades, researchers have begun to understand that resilience arises due to a combination of both internal and external factors. According to Hart et al. (2016), three subsequent "waves" of research point to a more

holistic view of health and resilience as a whole; an individual's tendency to survive and to thrive in the face of hardship is shaped by community support, environment, culture, and context, as well as genetic history and biological predisposition. The researchers posited that a modern approach to resilience must include attention to the cultural and socioeconomic barriers that may affect an individual's ability to react or adapt to challenges, and noted that research and practice of resilience must unite in accounting for and adjusting inequalities to ensure the highest possible level of resilience in individuals of all backgrounds.

Despite the recent development of a more rounded approach to resilience research, many of the current accepted definitions fail to offer the aforementioned holistic understanding of the environment within which an individual is attempting to function. Some researchers (Alvord & Grados, 2005; Connor & Davidson, 2003) suggested that resilience is a set of preexisting skills, qualities, or attributes that allow an individual to react in a more adaptive way when faced with a challenge. Others (Donnon & Hammond, 2007; Edwards, 2007; Lee & Cranford, 2008; Masten, 2011) implied a capacity for change: a "maximum potential" for individuals that may be reached given the proper environment and circumstances. Resilience has also been defined by positive outcomes or patterns thereof (Hart, Blincow, & Thomas, 2007; Leipold & Greve, 2009; Masten & Powell, 2003), suggesting that it cannot be quantified without an observable response to some form of adverse event. While these definitions point to varied explanations for an individual's inherent ability to overcome hardship, they do not take into account the external limitations that may be imposed by race, socioeconomic status, gender, disability, or other uncontrollable factors.

Masten, Best, and Garmezy (1990) noted that resilience could be the "process of, capacity for, or outcome of successful adaptation despite challenging or threatening

circumstances" (p. 426). These researchers suggested that resilience is characterized by growth or learning, regardless of whether inherent traits are present in an individual prior to an adverse event. Similarly, others noted an ongoing adaptive process demonstrating both dynamic potential and a reduced vulnerability over time (Luthar, Ciccheti, & Becker, 2000; Roisman, Padron, Sroufe, & Egeland, 2002; Rutter, 2012). While these definitions point to the ability of an individual to make changes to support personal wellbeing, they imply that environmental threats are unwavering, and that resilience is the gradual "hardening" of an individual to inevitable and inflexible circumstances. This, too, is inconsistent with the modern holistic view of resilience development and demonstration.

Hart et al. (2016) noted that, while definitions of resilience vary greatly, very few take into account the changing context of the adversity to which an individual is exposed. Even fewer, according to the researchers, examine the individual's attempts to change his or her own adverse circumstances. The researchers suggested that those who consider the nature and degree of adversity, as well as the capacity or tendency of an individual to change his or her own circumstances, come the closest to a socially just and inclusive view of resilience that implies the proper amount of personal responsibility. Others noted that resilience emerges when an individual changes, or even dramatically transforms, aspects of adversity (Hart, Gagnon, Aumann, & Heaver, 2013). Zoloski and Bullock (2012) stated that "avoiding negative paths linked with risks" (p. 2296) is critical to growth in the face of challenges. Ungar (2008) provided an inclusive and transformative definition, stating that "resilience is both the capacity of individuals to navigate their way to the psychological, social, cultural, and physical resources that sustain their well-being, and their capacity individually and collectively to negotiate for these resources to be provided and experienced in culturally meaningful ways" (p. 225). Thus,

resilience is neither the result of pure genetics nor the outcome of individualized learning experiences. Resilience represents the inherent and learned tendencies of an individual to seek, identify, seize, and employ both internal and external resources leading to a more positive outcome in the face of varied adversities. In a collective or community context, this may include the potential and drive to affect changes (governmental, environmental, situational, etc.) that impact both the nature and intensity of future hardships for self and others.

Resilience in Children

To examine the importance of resilience in children, it is first necessary to understand the ways in which adverse experiences may affect long-term development. Architectural development of the brain is heavily influenced by consistent "volleys" of interaction (Center on the Developing Child at Harvard University, 2012); normal, healthy brain growth occurs when children receive stable, undisrupted feedback after initiating a behavior. Because these "serve and return" interactions are vital to successful development, their disruption or absence can trigger strong stress responses in the body of the affected child. These stress responses include the increased release of corticosteroids into the bloodstream, effectively suppressing the immune system for a period of time. While this reaction is adaptive and can be beneficial in acute instances, chronic stress and the resulting long-term suppression of the immune system can lead to gradual wear on the cardiovascular, immune, neurological, and metabolic regulatory systems; the stress becomes toxic to the body (Shonkoff, Boyce, & McEwen, 2009). Linton et al. (2016) noted that resilience is characterized by the ability of the child to transform potentially toxic

Resilience in the presence of adverse childhood experiences may be best illustrated with the use of the "balance scale" model found in Figure 1 (National Scientific Council on the

Developing Child, 2015). According to this model, childhood development is likened to a twosided scale balanced on a fulcrum. One side represents negative outcomes, and the other represents positive outcomes in the child's life. Experiences that affect the child are either positive or negative, and affect the weight on the corresponding side of the scale. According to this model, the presence of positive circumstances (such as family support, rehearsal in dealing with manageable challenges, and skill-building opportunities) must simply out-balance negative influences to lead to positive outcomes. The "weight" of a specific circumstance or event may vary according to the environment and background of the individual; one positive event may outweigh two negative events, and vice versa. Thus, even in the face of highly challenging circumstances, a child may still emerge successful if given enough "weight" on the positive side of the scale.

The developers of this model suggest that, as on a literal balance scale, the placement of the fulcrum affects the tendency of the scale to tip in a certain direction. This fulcrum is initially represented by inherent qualities, biology, and predispositions. The placement of the fulcrum not only affects how much "weight" must be placed on one side of the scale to change an outcome, but also determines how stable the scale may be overall. Research suggests that this fulcrum may not be "fixed"; certain interventions or supports may contribute to a higher likelihood of positive outcomes regardless of the inherent qualities of a specific individual, effectively "sliding" the natural fulcrum of the scale. A fulcrum placement that allows the child to maintain positive outcomes in the face of adversity, or the ability of the child to take the steps necessary to affect such a placement, demonstrates resilience.



Figure 1. Balance scale model of resilience (National Scientific Council on the

Developing Child, 2015)

To actively develop this ability, children must have opportunities to "focus attention, solve problems, plan ahead, adjust to new circumstances, regulate behavior, and control impulses" (National Scientific Council on the Developing Child, 2015, p. 3). According to Felitti et al. (1998), occasions to rehearse and develop these abilities are provided when children's basic needs are met, and when they experience nurturing relationships, social connections, and healthy emotional communication.

Resilience in Spanish-Speaking CIF

Challenges faced.

Academic risk. According to Crosnoe (2013), CIF demonstrate higher grade point averages, standardized testing scores, and high-school completion rates than U.S.-born peers of the same ethnic backgrounds. Despite this statistic, immigrant children of Latino origin display high academic risk, due in part to lower-than-average school readiness (Crosnoe & Lopez Turley, 2011). Studies show that this may be due to a lack of individualized attention from adults with moderate-to-high literacy in primary and secondary languages (Green et al., 2009), indicating a need for individualized support supplemental to that received in the typical classroom environment.

Acculturation. In addition to academic challenges, CIF are exposed to a high level of acculturative stress within the educational environment. Defined as "the process of cultural and psychological change in cultural groups, families, and individuals following intercultural contact" (Berry, 1999, p. 69), acculturation occurs primarily within the school system as it provides the environment through which CIF are exposed to and immersed in the culture of the receiving society (Horenzcyk & Tartar, 2012; Suarez-Orozco & Suarez-Orozco, 2001).

Cultural behaviors and values are an inherent part of in-school education. These factors contribute not only to the acculturation of CIF, but to the reinforcement of homeland values in non-immigrant children (Vedder & Horenzcyk, 2006). Those who attend school in the United States are expected to adhere to a specific cultural norm. As CIF begin to adapt to this requirement, they often return home to parents who are still fully immersed in the "home" culture. This juxtaposition may result in the creation of unclear expectations, or even a dichotomous sense of identity for these children (Motti-Stefanidi & Masten, 2013). A weakened sense of personal identity is often correlated to increased stress and at-risk behaviors later in life (DeJonckheere, Vaughn, & Jacquez, 2017). The successful development of CIF depends upon the availability of exposure to both primary and secondary cultural norms for all children in the school environment (immigrants and non-immigrants alike).

Health risks. The navigation of an unfamiliar culture leads to a high likelihood for anxiety, depression, marginalization, confusion, and psychosomatic symptomology in the adults within immigrant families (DeJonckheere et al., 2017). Because "the health and safety of children depend on the people and environment around them" (Linton et al., 2016, p. 120), these symptoms pose a direct threat to CIF. The illness of a parent prevents the development of a strong child-caretaker relationship, which can have detrimental effects on the developing resilience of a child (Felitti et al., 1998).

Experiences linked to immigration (poverty, parental separation, discrimination, temporary or permanent homelessness, loss of family members, etc.) can be traumatic for children (Linton et al., 2016). Exposure to traumatic events in childhood is linked to numerous health risks, including adolescent pregnancy, addiction, depression, illicit drug use, heart disease, liver disease, multiple sexual partners, intimate partner violence, sexually transmitted diseases,

smoking, suicide attempts, and unwanted pregnancies (Felitti et al., 1998). Low-income immigrants are likely to lack health insurance, while immigrants overall "have poorer access to medical care than the native born, even when they are insured" (Ku & Jewers, 2013, p. 7). The presence of these health risks indicates a need not only for increased access to healthcare resources, but a need for the ability to seek and identify these resources where available.

Discrimination. Cordova and Cervantes (2010) identified a higher likelihood of discrimination and poor treatment for Latino CIF than for their U.S.-born ethnic counterparts. Language barriers, a lack of cultural understanding, and rising political tension all contribute to the marginalization of these children in modern schools (Ayon, 2016). This can lead to negative effects on the physical, mental, and emotional wellbeing of children and adults (Araujo Dawson, 2009; Ayon, Marsiglia, & Parsai, 2010; Umana-Taylor & Updegraff, 2007), and can promote feelings of isolation, marginalization, and mistrust, especially within the school environment (DeJonckheere et al., 2017).

Researchers note that "school-based prevention and intervention efforts are needed to address discrimination that occurs in child-child interactions as well as child-teacher interactions" (Ayon, 2016, p. 472). These intervention efforts should include the development of self-advocacy skills in CIF, as well as the exploration and celebration of cultural differences for all students enrolled.

Developing resilience.

Strong family relationships. In the early years of development, parents "are the primary socialization agents for children" (Ayon, 2016). According to Umana-Taylor and Guimond (2010), this is especially true in Latino families, as obedience and respect to parents is considered a necessary trait in "good" child behavior. The collectivist nature of Latino culture

leads children to adopt the values and behaviors of their parents; these become the resources that allow children to adapt to changing environments (Castro, Stein, & Bentler, 2009). For example, "family values and a responsible attitude toward community traditions were dual factors related to family bonding, perhaps operating also as sources of 'protection' against youth problem behaviors" (Castro et al., 2007, p. 621) for CIF in at-risk families. Potential positive influences of parental involvement for CIF include comfort and assurance of safety, education about nativity and documentation status, encouragement to adapt, strong models of advocacy, empowerment to self-advocate and advocate for others, increased ethnic pride, and an increased value of diversity and empathy (Ayon, 2016).

Parental involvement has been linked to increased personal advocacy behaviors in school-aged Latino CIF; Latino children who self-advocate are more likely to demonstrate self-esteem, empowerment, motivation, reduced stress, self-awareness, and a tendency to advocate for others (Ayon, 2016; Phinney & Chaveria, 1995; Spears Brown, 2015). A strong cultural identity developed through frequent, consistent, and nurturing contact with family leads to a higher potential for resistance to external threats such as discrimination, bullying, and exposure to illicit drugs and violence for Latino CIF (Perreira, Fuligni, & Potochnick, 2010; Swim & Thomas, 2006; Umana-Taylor & Updegraff, 2007; Umana-Taylor, Updegraff, & Gonzalez-Backen, 2011).

Strong peer relationships. While strong family relationships are key to the development of resilience in children, overdependence on the family unit may lead to an increased expectation for discrimination and mistrust in young Latino CIF (Ayon, 2016). Research shows that preparedness of this type can serve as a protective factor for some students to some extent (DeJeckonheere et al., 2014). Multiple researchers note, however, that resilience is best

developed through varied networks of supportive relationships, including strong relationships with peers (Ayon, 2016; DeJonckheere et al., 2014; Hart et al., 2016; National Scientific Council on the Developing Child, 2005/2015).

Supportive peer relationships foster the development of healthy social skills that contribute to resilience in Latino CIF. According to the National Scientific Council on the Developing Child (2015), healthy peer connections allow for exposure to positive social stressors, providing opportunities for the rehearsal of coping mechanisms that may promote resilience to discrimination. Children who engage actively with peers are provided with opportunities to practice self-advocacy, and are more likely to develop personal positions regarding social justice and to advocate for others (Ayon, 2016).

Nakamoto and Schwartz (2010) noted that avoidance-based coping strategies, including peer avoidance, can be linked to lower academic outcomes among school-aged Latino school children. Crean (2004) found that these avoidance-based mechanisms are linked to maladaptive outcomes, while active strategies (such as collaborative problem-solving) are linked to adaptive outcomes. Significant social resources and support networks reduce the likelihood that students will choose avoidance-based coping strategies, increasing their likelihood of successful adaptation when faced with challenging circumstances. (Crean, 2004).

Skill-building. According to McEwen (1998), "a resilient brain adapts to similar types of non-life-threatening stressors by adopting coping skills based on experience" (p. 172). Children are made more resilient when they are able to develop healthy coping mechanisms to ease the distress that accompanies a challenging event. Because active coping strategies lead to adaptive outcomes more frequently, it is imperative that Latino CIF be assisted in developing healthy, active strategies for managing the stressors encountered in daily life (DeJonckheere et al., 2014).

Executive function and self-regulation. The ability to manage one's own behaviors and emotions is key to the development of resilience, and can be honed through supported practice. Latino children may increase their adaptability through "the development of explicit skills and capabilities that support cognitive flexibility, goal-setting, problem-solving, and the ability to resist impulsive behavior" (National Scientific Council on the Developing Child, 2015, p. 5). Furthermore, it is possible that strong executive function aids bilingual children in switching fluidly between languages (Riggs, Shin, Unger, Spruijt-Metz, & Pentz, 2013), which may help to alleviate stressors that affect school-aged CIF. Environments and interventions that allow for the development of executive function and self-regulation provide CIF with the opportunity to not only overcome stressors, but to actively set goals and solve problems in the interest of reducing future adversity.

A sense of mastery. According to the National Scientific Council on the Developing Child (2015), "those who believe in their capacity to overcome hardships and guide their own destiny are far more likely to adapt positively to adversity" (p. 5). In interviews conducted by Ayon (2016), Latino CIF noted that a feeling of control, a sense of being "good at" something, and a personal say in their own education led to confidence, comfort, and alleviation of anxiety in the academic environment. These students also noted that language skills represented a large portion of their in-school anxiety; Latino CIF who reported success in language learning (both in home languages and in English) reported feelings of security, pride, and optimism for the future. Inschool interventions for Latino CIF in the U.S. must therefore provide opportunities for mastery in various areas including, but not limited to, language learning in both Spanish and English.

Music Therapy and Resilience for Dual Language Learners Building Strong Relationships

Childhood development is heavily dependent on quality interactions with others. Elements of music such as rhythm, melody, and harmony "require a level of order and structure created by the combined efforts of a group engaging in a music experience" (Gfeller, 2008, p. 68). Gfeller, a researcher and music therapist, suggests that collaborative music games offer "opportunities to practice and develop social skills" (p. 47) for children in the preoperational stage of development. Music therapy provides a framework by which music may enable community integration in pursuit of the development of strong relationships through an increase in social contact, gratification of expressive and creative needs, perceived equality between members of a social group, and genuine positive regard (Ghetti, 2016, p. 4).

Group application of varied therapies has been shown to aid in the elimination of symptoms for Spanish-speaking DLLs, such as "delayed school adjustment, low self-esteem, poor academics, limited expression of feelings, negative attitude(s) toward school related to poor self-concept, and perceptions of not fitting in" (Villalba, 2003, p. 262). Originally developed by Seaman (1968) and discussed by Friedlander (1994), there exist three basic assumptions to which one must subscribe when considering the validity of music therapy as a means to the improvement of socialization and communication in pursuit of strong interpersonal relationships:

- 1. Individuals do not express themselves through words alone.
- 2. Symbolic representation of feelings is an essential aspect of therapy.
- 3. Individuals better express their feelings in a here-and-now situation in a group context if they are not restricted to a purely conversational form of expression.

These assertions suggest that music, a nonverbal form of communication, provides an alternate means by which English-language learners may express thoughts, feelings, and needs in

pursuit of a more fulfilling social experience. "Music is experienced as portraying emotion in a socially coded manner" (Pavlicevic, 2000, p. 276). This could be interpreted to suggest that music can provide DLLs with "a context for learning emotional expression within a new culture" (Schwantes, 2009, p. 80), and that the incorporation of music leads to an increase in positive behaviors in school children that benefits interactions with both teachers and peers (Colwell and Murlless, 2002).

Skill Building

Executive function and self-regulation. The inherent qualities of music make it an adaptable tool for the shaping of a tailored environment through which CIF may rehearse the development of essential skills. Music experiences may be designed to "recreate, simulate, or represent the conditions or circumstances" (Bruscia, 2014, pp. 179-180) that challenge CIF in schools, and can offer opportunities for goal-setting, problem-solving, and the rehearsal of impulse control. Multiple researchers have examined varying effects of music therapy interventions with DLLs (Fisher, 2001; Gfeller, 1982; Kennedy, 2008; Kennedy & Scott, 2005; Ray, 1997); results indicated increases in critical thinking skills, the ability to seek help when necessary, self-discipline, collaborative problem-solving behaviors, self-expression, self-advocacy, verbal and written comprehension of directions, and teamwork. Subjects also demonstrated reductions in maladaptive behaviors, including inappropriate classroom conduct, quitting after failure, aggressive outbursts, negative self-statements, and avoidant coping strategies.

A sense of mastery. Student perception of personal mastery in the academic environment is key to the development of indicators of resilience for Hispanic and Latino students in the United States education system (Ayon, 2016). Music is inherently validating and affirming

(Bruscia, 2014); students have the opportunity to gain immediate sensory feedback following each decision made in the context of a music therapy session, contributing to a potentially generalizable understanding of how personal behavior may lead to desired outcomes. Culturally diverse students "are receptive to learning that is relational and holistic" (Curtin, 2005, p. 22), suggesting that the inclusion of supplementary services such as music therapy may be effective in augmenting student performance (and personal perception thereof) throughout the dual language learning process. Table 1 outlines an overview of findings regarding the use of music therapy to buffer educational challenges for DLLs in U.S. schools.

Table 1

Study	Findings
<u>Brady</u>	<u> </u>
Ray (1997)	Students participating in daily music instruction displayed one or more levels of English language advancement 70% more frequently than those who had no music instruction.
Schunk (1999)	A combination of music and American Sign Language (ASL) had a positive impact on the receptive English vocabulary skills of elementary school students from various cultural backgrounds.
Fisher (2001)	When taught in the context of a music environment, DLLs displayed greater performance in non-primary language learning than those who learned in a non-music environment.
Kennedy and Scott (2005)	Music therapy interventions led to an increase in English language abilities, including oral language skills and reading comprehension, for children enrolled in language learning programs.
Gfeller (2008, p. 47, 49)	"Make believe, action and story songs, and imitations are not only favorite singing experiences but also excellent opportunities for the playful practicing of communication and learning vocabulary."
	Music can "bring a feeling of normalcy and fun" to language learning experiences within the therapeutic process.
Kennedy (2008)	Active participation in music therapy experiences may lead to enhancement of both receptive and expressive processing of information in the English language for DLLs.
	A connection exists between singing and improved production of target phonemes in a non-primary language.

The Use of Music Therapy with DLLs in U.S. Schools

Music and language learning. The development of a sense of mastery for DLLs in academic settings is often connected to proficiency, both spoken and written, in the learner's non-primary language (Ayon, 2016). Music offers opportunities for the development of secondary language skills by increasing the acquisition and retention of new vocabulary, improving the ability to correctly sequence and emphasize words while speaking, and providing a non-threatening and normalized environment within which effective learning may occur.

Neural connections. The processing of unfamiliar vocabulary and the assignment of meaning to words in a previously-unlearned language utilizes a vast network of connections in the human brain. According to Brooks and Kempe (2012), for much of medical history "the [neural] locus of semantic processing, especially for comprehending words, was assumed to be in the posterior part of the superior temporal gyrus, in a region also known as Wernicke's area" (p. 267). Modern research has demonstrated that the human brain is activated in multiple regions during semantic processing (assigning meaning to words) and discourse processing (deciphering text content). It has been asserted by multiple researchers that these regional activations are word-specific and directly relate to the meaning assigned to unfamiliar vocabulary (Dehaene-Lambertz et al., 2009; Denes, 2011; Perani & Abutalebi, 2005; Pallier et al., 2003; Stemmer & Whitaker, 2008). Brooks and Kempe (2012) illustrated these connections, stating that "regions of the inferior temporal gyrus, close to visual processing areas in the occipital lobe, are activated when processing imageable words (e.g. dragon, castle), whereas words denoting graspable objects (e.g. doorknob, pencil) activate anterior areas in the pre-motor and motor cortex" (p. 267).

Prolonged activation of the non-semantic portions of the brain may lead to increased retention of unfamiliar words when applied during the initial learning process (Denes, 2011;

Hickok & Poeppel, 2000; Kim, Relkin, Lee, & Hirsch, 1997). "The effective use of language requires the interaction of memory with sensory input and motor output systems" (Price, 2000, p. 335), including the visual, motor, and auditory processing centers of the brain. This extended stimulation of non-semantic brain areas can be achieved through participation in music experiences such as observation of music performance, active physical involvement in music playing, and listening to live or prerecorded music (Gfeller, 2008).

Second-language learning requires the conscious mastery of language rules and the rehearsal of unfamiliar vocabulary made efficient through extralinguistic support. "Music, like speech, is considered a form of communication, for it is made up of a system of symbols with specific rules of organization through which people can express themselves" (Gfeller, 2008, p. 60). Music also has the ability to "reinforce teaching by helping to practice and revise vocabulary, idioms, sentence patterns, pronunciation, stress, rhythm, and intonation in a variety of language styles" (Rees, 1977, p. 226).

The intonation variance required in song production may provide cues beneficial to nonprimary language learners in the development of sentence sequencing (Staum, 1987), and the naturally motivating quality of music experiences may offer an increased opportunity for extended engagement in young students. Kennedy and Scott (2005) noted that "vocabulary is incidentally acquired through the development of syntax and familiar phrasing" and found that music experiences provided the contextual information, immediate positive feedback regarding correct word usage, and familiar structure required for the effective rehearsal of non-primary vocabulary and grammar. Research has further demonstrated that participation in music interventions provides an increased capacity for "receptive identification of targeted vocabulary words" (Schunk, 1999, p. 122) for students learning a second language.

Music and memory. When new information is acquired, it can be stored for only 18 seconds in the Short-Term Memory. Extended retention requires the transference of information to the Long-Term Memory; this occurs through revision and repetition (Anderson, 1995). Access to information stored in the Long-Term Memory is achieved through the presentation of learned cues. When melody replaces text or words in the initial storage of information, these cues are more readily accessed (Anderson, 1995). For this reason, music is often used as a tool for the encoding of valuable information.

According to Sacks (2007), sensitivity to music is common to all of humanity; the researcher noted that "automatic or compulsive internal repetition of musical phrases is almost universal" (p. 44). Many educators recognize that music-based mnemonics are an effective tool for the communication of difficult or unfamiliar material (Hayes, 2009). Gfeller (1982) observed that chanting while teaching resulted in fewer errors and improved verbal reproduction for students in a public learning environment; the increased novelty provided through music (and the resulting improvements in attention) contributed to the enhanced recall of information in both spoken and read contexts. Students who were taught using musical mnemonics demonstrated more efficient retrieval of information, engaged in more positive interactions within the academic environment, and ended the academic term with higher grades than those taught using speech alone (Mastropieri, Sweda, & Scruggs, 2000).

According to Silverman (2007), music (or elements thereof) can be more effective than spoken word when teaching with the intent to promote enhanced future recall. In an investigation of the effects of music on subject retention of experimenter-derived nonsense words, Madsen (1991) observed a significant increase in language transfer and the number of words learned when music was added to the learning environment. The researcher noted that these

improvements may have been related to the increased contextual information provided through the structure of the utilized musical accompaniment. Wallace (1994) stated that, when using music to promote the retention of information, "the melody connects chunks and lines and phrases, which assists in learning. At retrieval, the melody provides a framework that indicates how much information must be recalled, where information has been omitted, as well as the order of segments" (p. 1475). Music, therefore, provides contextual support that may encourage the development of a more fluent recall of learned information when acquiring vocabulary in a non-primary language. This improvement can enhance student perception of personal success in pursuit of the development of a sense of mastery in the academic environment.

Overview of Study

The research pointing to connections between music therapy interventions and indicators of/contributors to resilience suggests a need for further exploration of a direct link between music therapy interventions and the development of resilience in Hispanic/Latino DLLs and their English-speaking peers within the American classroom. The author sought to identify a connection between music therapy interventions and the indicators of resilience measured by the CYRM-26 (Ungar & Liebenberg, 2011). The null hypothesis was as follows, that participation in tailored group music therapy interventions would produce no difference in the resilience scores of Hispanic/Latino DLLs and their English-speaking peers as measured by the CYRM-26.

<u>CHAPTER 3</u> Method

Subjects and Setting

Subjects for this study were children enrolled in grades K-3 at a public elementary school in rural southwest Virginia (n = 7); the ratio of DLLs to English-speaking students was 4:3. The subject group included an equal number of Spanish-speaking DLLs and their English-speaking peers (4:4). One English-speaking student did not return a consent form, and was therefore excluded from data collection and analysis; this student was not excluded from music therapy sessions, as participation was deemed beneficial. Participants identified as both male and female. The age of participants ranged from 6 to 8 years (M = 6.86, SD = 0.69). Age was normally distributed, with skewness of 0.12 (SE = 0.93) and a kurtosis of 2.05 (SE = 1.85). Countries of origin included the United States (three subjects), Mexico (three subjects), and Guatemala (one subject).

Due to the naturalistic setting of the study, scheduling considerations, and classroom composition, randomization of the subject group was not possible. Sessions took place in the elementary school art and music rooms during the students' typical school day. Students were pulled from a non-instruction-based remedial period to participate in the study, and returned to class immediately following each session.

Experimental Design

The quasi-experimental, exploratory study utilized the CYRM-26 to evaluate the impact of group music therapy interventions on the resilience of students in the identified subject pool. A pretest-posttest design was implemented to evaluate change over time as a direct result of music therapy interventions. The experiment had no impact on the pre-existing secondary

language services or general academic services received by the subjects; there was only the addition of goal-based music therapy interventions for all participants.

Instrument

The CYRM (Ungar & Liebenberg, 2005) was originally designed as a 28-item measure for youth between the ages of 9 and 23 years. Developed through collaboration between investigators in 11 countries with a focus on individualized attention for subjects, cross-cultural validity, and an emphasis on encouragement and equality for subjects of all cultural backgrounds, the instrument measures resilience using three subscales (individual capacities/resources, relationships with primary caregivers, and contextual factors that facilitate a sense of belonging). The test may be administered by any researcher with permission from the developers; permissions (Appendix A) may be gained through completion of an online form. There is no cost to reproduce, administer, or score the test.

The development of the CYRM was conducive to a test-retest experimental design. Internal reliability was assessed using Cronbach's α , paired sample *t* tests, and interclass correlation coefficients on Time 1 and Time 2 responses. Cronbach's α ranged from .65 to .91, and paired sample *t* tests yielded no significant differences (suggesting strong cross-temporal stability). Interclass correlation coefficients ranged from .583 to .773, indicating high absolute agreement for the three components of the test (Liebenberg, Ungar, & Van de Vijver, 2012).

Since its initial validation, the measure has been adapted into a 26-item version for use with children aged 5 to 9 years. Other available adaptations include a 12-item version to be completed by the child, as well as a 28-item and 12-item version to be completed by the "person most knowledgeable" about the child. All adaptations offer both 3-point and 5-point response scales with varied visual aids. The version of the test utilized in this study is the 26-item test in

the "child-about-self" respondent style based on a 3-point response scale utilizing "Option 1" visual aids, selected for ease-of-use, subject-reported data, and thorough examination of subscales. The optional "Section B" of the test was not used in this study due to a lack of resources for development of site-specific questions. The English version of the exact instrument used can be found in Appendix B.

Translation

In an effort to promote a consistent testing experience for all subjects, the researcher sought to offer the instrument in each subject's preferred language. While translations of various versions of the instrument are available in multiple languages, a direct Spanish translation of the version of the test utilized for this study was not available. Developers of the test openly endorsed the reference of accurate third-party translations in the administration of the test. To provide an inclusive testing atmosphere, the researcher consulted with native Spanish speakers from Puerto Rico, Guatemala, Mexico, and El Salvador to provide a direct Spanish translation that best represented the subject pool of this particular study. Items were presented to each native speaker, and the translations offered were recorded. If there existed any discrepancy in translation of an item, the researcher utilized a simple majority to determine which translation would be used. The resulting Spanish translation of the instrument can be found in Appendix C.

Selection of Participants

Inclusion Criteria

Subjects were a convenience sample of children in grades K-3 enrolled in a public elementary school in rural southwest Virginia. All Hispanic/Latino DLLs who fell within these guidelines were included in the study. Inclusion of English-speaking subjects was based on educational proximity; only English-speaking students that shared a primary classroom teacher

with consenting DLL subjects were included. Subjects were not examined for pre-existing conditions or diagnoses in an effort to simulate the neuro- and biodiversity of the typical American classroom.

Group Formation

Subjects were selected with the assistance of the district DLL Coordinator, the elementary school principal, and the primary classroom teachers of the potential subject pool. The DLL coordinator provided a list of all Hispanic/Latino DLL students in grades K-3, and the principal identified the primary classroom teachers of each. Consent forms, developed in English (Appendix D) and Spanish (Appendix E) through collaboration with native speakers from Puerto Rico, Guatemala, Mexico, and El Salvador, were distributed to all students in the classrooms of the identified DLLs via the weekly parent contact folder. No blinding or masking were used in the implementation of this study.

Results of a G*Power analysis (Faul, Erdfelder, Lang, & Buchner, 2007) suggested a minimum of 13 subjects in both experimental and control groups. Due to the low number of returned consent forms (7), no control group was formed and all consenting subjects were retained for participation in a single experimental group.

Procedure

The experimental design was developed with adherence to the TREND statement (Des Jarlais, Lyles, Crepaz, & The Trend Group, 2004); the checklist may be viewed in Appendix F, and a related participant flowchart may be viewed in Figure 2. This project was approved by the Institutional Review Board (IRB) at the institution in which the author was enrolled as a graduate student (Appendix G). The proposal outlined the purpose, design, implementation procedures, materials, testing procedures, consenting procedures, and confidentiality standards of the study.

All supplementary materials (including consent forms, testing instruments, and translations) were approved by the IRB prior to contact with the subject group.



Figure 2. TREND participant flowchart (Des Jarlais, Lyles, Crepaz, & The Trend Group, 2004)

Pretest

Consistent with developer recommendations, the researcher administered the test individually to all subjects. Pretesting occurred on-site at the elementary school in an auxiliary room attached to the main office. Prior to administration, subjects were asked to identify a preferred language (Spanish or English). Once a preferred language was established, the researcher obtained verbal assent for testing ("Are you willing to answer some questions about yourself and the people around you?"/ "¿Estás dispuesto a responder algunas preguntas sobre ti y las personas que te rodean?").

Following assent, the researcher utilized the subject-preferred language to explain the visual aid answering system to each subject as directed in the instrument manual. The researcher then read each item in the subject's preferred language and asked subjects to respond either by stating the answer ("no/sometimes/yes" or "no/a veces/sí") or by pointing to the corresponding visual aid. All answers were recorded manually by the researcher on a separate document. **Goals**

Pretest data and resilience-based literature were used to develop goals, which served as a framework for the therapeutic process and a guide for the development of interventions. Each goal was designed to encourage the development of factors indicative of or supportive to resilience in children, with a specific focus on Hispanic/Latino CIF. Subsequent objectives were developed with attention to behaviors associated with resilience in current literature. See Table 2 for a list of goals and objectives used with the subject group in this study.

Goals and Objectives	
Goal	Related Objectives
To develop personal skills.	Client will verbally identify a minimum of one positive quality about the self within the music therapy session.
	Client will share one item with another group member a minimum of two times within the music therapy session.
To improve sense of belonging in an educational context.	Client will verbally identify a minimum of one positive quality about another group member within the music therapy session.
	In the context of a group music-making experience, client will play an instrument with another group member for a minimum of three continuous minutes.
To increase perception of peer support.	Client will verbally identify one way in which another group member supported them during the session.
	In the context of a music-based collaborative-problem-solving intervention, client will contribute a minimum of one solution (verbal or musical) to a predesigned problem.
To improve sense of belonging in a cultural context.	Client will verbally identify a minimum of one cultural fact about the self within the session.
	Client will verbally identify a minimum of one cultural similarity between the self and another group member within the session.

Table 2Goals and Objectives
Session Structure

Sessions took place within a 50-minute period each week for 11 weeks as a part of the subjects' regularly scheduled school day. Subjects were pulled from non-instruction-based remedial courses and walked together to the main office, where they were greeted at the door by the researcher. The researcher utilized each subject's preferred language to obtain assent prior to beginning each session. Due to scheduling needs in the elementary school, each session included the subjects' lunch time. Subjects walked through the lunch line accompanied by the researcher and ate lunch in the session room (either the elementary school music room or the art room) prior to engaging in the 35-minute group music therapy session.

Lunch discussion. As subjects ate lunch, the researcher facilitated discussion to promote the development of rapport and to encourage the development of interpersonal relationships. Subjects were offered individual opportunities to discuss experiences from the previous week, to share news from home or school, and to recall learning from prior sessions. The researcher verbally encouraged subjects to recall facts learned about other group members in prior sessions (i.e., favorite colors, family members, strengths, etc.) and posed questions to encourage positive statements about self and others.

Hello song. Following lunch, the researcher began to strum the chord progression associated with the hello song. As the music began, subjects responded to a verbal prompt to place their lunch trays along the side of the room and return to the music therapy space. The researcher stood or sat with the subjects and initiated an age-appropriate bilingual hello song with guitar accompaniment (Appendix H) designed to provide opportunities for individual expression and the development of interpersonal relationships.

33

In the final three sessions, subjects sang the hello song while playing a teamwork-based game. Subjects held the edges of a sheet, and a ball was placed in the center. Subjects worked together to shake the sheet according to the music style with the goal of keeping the ball in the air. The researcher varied the style, tempo, and dynamics of the music (both vocally and in guitar accompaniment) to encourage active problem-solving among group members.

Communication and collaborative problem-solving. Each session contained an intervention based on either nonverbal communication or collaborative problem-solving designed to offer growth in all goal areas. See Appendix I for a descriptive summary of all interventions used across the engagement period.

Discussion and summary. Subjects returned to a seated position and were provided with individual opportunities to describe what they learned within the session (this also served as an exercise in turn-taking). Due to variations in lunch wait times and mealtime discussion, this discussion took place in the three initial sessions only.

Goodbye song. Subjects sang an adaptation of the hello song with guitar accompaniment (Appendix J). This song served primarily as a structural element and helped to reestablish a music-based atmosphere following the weekly discussion. When session time did not allow for a formal final discussion, the goodbye song was sung a cappella as subjects lined up to leave the session room. In the final two sessions, subjects sang the goodbye song with the researcher as they walked back to class.

Therapeutic space. The researcher relied heavily on modeling and musical structuring to communicate with subjects in each session. Subjects were, however, encouraged to communicate verbally with one another. A music-based environment was chosen to provide inherent structure in the context of a multilingual environment, and to reduce any bias or advantage that may have

occurred through the presence of a primarily English-speaking researcher. The reliance on music was also designed to influence subjects' perception of the therapeutic environment, specifically with the intent of differentiating between the sessions and academic courses.

If a behavioral issue was presented, musical redirection served as the first response. For example, if a subject became distracted in the context of an intervention, the researcher would drastically change the volume or tempo of the music, change the style of the accompaniment, change the style of singing, or sing the subject's name in the context of the song. Verbal redirection was presented in the form of praise to those exhibiting the appropriate behavior ("I like the way Sam is dancing with the beat of the music; me gusta cómo Sam está bailando con el ritmo de la música"). If direct verbal acknowledgement of an inappropriate behavior from the same subject as soon as possible.

Posttest

Consistent with pretesting, the researcher administered the test individually to all subjects. The researcher obtained verbal assent for testing from each subject utilizing the same wording and preferred language identified prior to the pretest. Following assent, the researcher utilized the subject-preferred language to explain the visual aid answering system to each subject as directed in the instrument manual. The researcher then read each item in the subject's preferred language and asked subjects to respond either by stating the answer ("no/sometimes/yes" or "no/a veces/sí") or by pointing to the corresponding visual aid. All answers were recorded manually by the researcher on a separate document.

35

CHAPTER 4

Results

The null hypothesis was that participation in tailored group music therapy interventions would produce no difference in the resilience scores of Hispanic/Latino DLLs and their English-speaking peers as measured by the CYRM-26. Post-treatment scores in overall resilience, resilience subscales, and subscale clusters were measured with a re-administration of the CYRM-26 following the final treatment session. Each subject experienced testing conditions (testing room, administrator, language selection) consistent with those applied during the pretest, and all subjects that were pretested participated in the posttest. Improvement was denoted by a positive numerical change in scores for each category of measurement (i.e., overall resilience, subscale, and subscale clusters).

Pretest and posttest scores (Table 3) were compared for significance with a two-tailed paired *t*-test. Results indicated statistically significant positive differences between pretest scores (M = 66.7, SD = 7.68) and posttest scores (M = 72.7, SD = 4.57) in overall resilience, t(6) = 2.60, p < .05, d = 0.95, in the Context/Sense of Belonging subscale, t(6) = 2.73, p < .05, d = 1.12, in the Context/Sense of Belonging: Cultural Context subscale cluster, t(6) = 2.83, p < .05, d = 1.09, and in the Psychological Caregiving subscale cluster, t(6) = 2.49, p < .05, d = 0.96. No statistically significant differences were found for additional subscales or subscale clusters, though mean scores for all subscales and subscale clusters increased (with the exception of the Context/Sense of Belonging: Spiritual Context subscale cluster, which remained the same).

While sample size was not large enough to prove generalizability for results, large effect sizes (ranging from d = 0.95 to d = 1.12) indicated high practical significance. The researcher was therefore able to reject the null hypothesis that participation in tailored group music therapy

interventions produces no difference in the resilience scores of Hispanic/Latino DLLs and their English-speaking peers as measured by the CYRM-26.

Category (Score Possible)	Pretest		Posttest		Obtained t	
Overall Resilience (78)	66.71	<i>SD</i> = 7.68	72.71	<i>SD</i> = 4.57	t = 2.60	
Individual Subscale (33)	27.86	<i>SD</i> = 3.63	30	<i>SD</i> = 2.83	<i>t</i> = 1.95	
Personal Skills Cluster (15)	11.71	SD = 2.21	13	<i>SD</i> = 1.41	<i>t</i> = 1.33	
Peer Support Cluster (6)	5.14	SD = 1.57	5.71	SD = 0.76	t = 1.00	
Social Skills Cluster (12)	11	SD = 1.15	11.28	<i>SD</i> = 0.95	<i>t</i> = 1.92	
Relationship with Caregiver Subscale (21)	18.29	<i>SD</i> = 2.21	19.86	SD = 1.21	<i>t</i> = 2.42	
Physical Caregiving Cluster (6)	5	SD = 1.00	5.43	<i>SD</i> = 1.13	<i>t</i> = 1.16	
Psychological Caregiving Cluster (15)	13.29	SD = 1.50	14.43	SD = 0.79	t = 2.50	
Context/Sense of Belonging Subscale (24)	20.57	SD = 2.64	22.86	<i>SD</i> = 1.22	<i>t</i> = 2.73	
Spiritual Cluster (6)	5.57	SD = 0.53	5.57	<i>SD</i> = 0.53	t = 0	
Education Cluster (6)	4.71	SD = 1.60	5.86	<i>SD</i> = 0.38	<i>t</i> = 1.81	
Cultural Cluster (12)	10.29	SD = 1.11	11.43	SD = 0.98	<i>t</i> = 2.83	

Table 3

Mean Experimental CYRM-26 Pretest and Posttest Scores

CHAPTER 5

Discussion and Conclusions

Research indicates a need for the development of resilience in DLLs to promote functionality despite a potential for increased academic risk, acculturative stress, threatened physical health, and increased discrimination in the educational environment (Berry, 1999; Crosnoe & Lopez Turley, 2011; DeJonckheere et al., 2017; Felitti et al., 1998; Green et al., 2009; Horenzcyk & Tartar, 2012; Ku & Jewers, 2013; Linton et al., 2016; Motti-Stefanidi & Masten, 2013; Suarez-Orozco & Suarez-Orozco, 2001; Vedder & Horenzcyk, 2006). Results of this study suggest that live music therapy sessions may have a significant positive effect on the resilience of Spanish-speaking DLLs and their English-speaking peers. Outcomes further demonstrated the potential for significant improvement in child perception of overall context and sense of belonging, cultural context, and perception of psychological caregiving.

Logistical obstacles presented throughout the engagement period likely affected the outcomes, and will require attention in the replication of this study. Due to the relatively low number of returned consent forms, the formation of a control group was not possible while maintaining an appropriate experimental sample size. Despite the low number of subjects included in the study, analysis demonstrated significant difference with a large effect size; typical childhood development and access to common educational resources may have contributed to this increase in resilience and related subscales over the course of the engagement period.

Subject absence, inclement weather, and regularly-scheduled academic breaks prevented the administration of regular weekly sessions, and group meetings were irregularly spaced over

the course of the engagement period. Sessions took place during the subjects' lunch period, and the session time included waiting in the lunch line, mealtime, and cleanup. The incorporation of these events and accompanying discussion led to variance in the length of active music-making that occurred in each meeting. Academic scheduling required the use of multiple session rooms, affecting the environmental consistency of weekly interventions. While these factors may have affected the outcome of the study, increases in target outcomes despite variations in the therapeutic environment may serve as further indicators of subject resilience.

Further research on the topic of resilience in DLLs and CIF should utilize a larger sample size, and should employ a control group to further evaluate the direct efficacy of music therapy interventions. Subject groups should include students in both urban and rural environments, and should be structured to simulate the neuro- and biodiversity of the geographic region in question. Subjects should not be pulled from instruction-based courses or play-based periods (such as recess or physical education) for sessions, as this will reduce potential negative effects on both academic and social growth.

While the experimental group in this study consisted of an equal distribution of DLLs and English-speaking students, the functional English skills of all subjects were relatively high. Research with experimental groups demonstrating greater need in this area may benefit from the presence and assistance of a translator or DLL instructor. Researchers should be aware of state and federal regulations that may affect the structure and implementation of dual language learning in the experimental region. Close contact and frequent correspondence with the on-site DLL coordinator, the school administration, and the DLL instructor are recommended to ensure that interventions are conducive to each subject's regularly-scheduled academic progress. While music can be an effective tool for the supplementation of language learning and general

academic recall, the use of music as a strictly educational tool falls outside of the scope of music therapy practice. Collaboration with music therapists is highly recommended when using musicbased educational methods, as the educational process is affected by more than strictly academic factors. Music therapists should not, however, seek to adopt a teaching-based role in interactions with DLLs.

Additional research with the CYRM-26 is recommended, preferably with the inclusion of site-specific questions (described in Section B of the instrument manual). Further translation or adaptation of the instrument must occur with the input of native speakers of the target language, and should be tailored to the reading level of the subject group. While significant improvement was reported for overall resilience, context and sense of belonging, cultural context, and perception of psychological caregiving, results showed increases in mean scores for all categories (with the exception of spiritual context). Future research should include the investigation and application of additional interventions and their efficacy on the improvement in all subscales and subscale clusters examined by the CYRM-26.

The researcher served as the interventionist in this study; subjects of the study established a relationship with the researcher over the course of the engagement period. While some subjects participated in the previous non-experimental group, the passage of time and introduction of new group members likely buffered the effects of this pre-existing relationship on subject responses to both measures and interventions.

The development of resilience in DLLs is related to the existence and perception of strong family relationships, strong peer relationships, and opportunities for skill-building (with emphasis on executive function, self-regulation, and opportunities for mastery). Music therapy interventions are flexible and unique in modality, and can be tailored to encourage an increase in

the aforementioned factors. When designing interventions, music therapists must consider not only the strengths and needs of the client group, but the cultural and familial contexts within which they developed. Analysis of past experiences, personal motivations, potential traumas, and continually developing home-life situations must be conducted to ensure the development of the best possible environment for growth.

The immigrant population within the United States is highly diverse. Subgroups emigrate from different countries, and each subgroup carries its own identities, rituals, customs, and traditions. The development of a strong therapeutic relationship is key to the understanding of each clients' unique experience; the therapist must avoid generalizations when considering each group member's ideations and attitudes toward the therapeutic process. Similarly, Englishspeaking students may subscribe to a wide variety of cultural identities, and may carry learned associations that affect the integration of the educational environment. Exploration of these unique undercurrents should be conducted as part of the therapeutic process; the navigation of group dynamics will allow for generalizable rehearsal of conflict resolution, and may also contribute to the development of cross-cultural understanding at an early age.

Children, regardless of cultural background, are not oppressors. Environmental learning shapes the minds of young individuals to utilize inherent resources toward a specific cause determined by the norms to which they are exposed. The introduction of inclusive, culturally aware, and culturally celebratory music therapy interventions supports the cultivation of a shifting norm and a collective mindset that will lead to systematic change. Resilience-focused music therapy practice should seek to encourage the development of a culture that gives rise to opportunities for individuals to seek, identify, seize, and employ both internal and external resources leading to a more positive outcome in the face of varied adversities. When applied in a

42

group music therapy context, this can contribute to societal potential and a collective drive to affect changes (governmental, environmental, situational, etc.) that impact both the nature and intensity of future hardships as they apply both to individuals and to the greater community.

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Appendix A

CYRM-26 Permissions

RRC <rrc@dal.ca></rrc@dal.ca>	Thu, Jul 20, 2017 at 7:51 AN
Reply-To: rrc@dal.ca	
CYRM PASSWORD	
ight	
Thank you for your interest in using the CYRM. Here is the password you have requested to access the tools:	
Regards.	

Appendix B

CYRM-26 English Version

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	For office use only
Participant Number:	
Site ID:	
Data number:	
Date of administration:	

Child and Youth Resilience Measure (CYRM) Child Version

DIRECTIONS

Listed below are a number of questions about you, your family, your community, and your relationships with people. These questions are designed to help us better understand how you cope with daily life and what role the people around you play in how you deal with daily challenges.

There are no right or wrong answers.

SECTION A:

Please complete the questions below

- 1. How old are you now?_____
- 2. Are you a boy or a girl?_____
- 3. Who do you live with? (For example: mother, father, aunt, uncle, grandparent, friends, etc.)
- 4. Who is your family? (For example: mother, father, brothers or sisters, foster or adopted)



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OPTION 1: SECTION C

Please circle one answer for each question.

	No	Sometimes	Yes
1. I have people that I admire.			\bigcirc
2.I cooperate with the people around me.			\bigcirc
3. Obtaining an education is important to me.			(\cdot)
I know how to behave/act in different social situations.	••		:
5. My parents or caregivers supervise me always.	••		$\textcircled{\bullet}$
My parents or caregivers know a lot about me.			\bigcirc
7. I have enough to eat when I am hungry.	••		
8. I try to finish what I start.	••		(\cdot)
9. I feel proud of my cultural heritage.	••		:
10. Other children like to play with me.	••		:
11. I talk to my family about how I feel.	••		\bigcirc
 I can resolve my problems without hurting myself or hurting others. 	:		

Page 1 of 2

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	No	Sometimes	Yes
13. I feel supported by my friends.	••		:
14. I know where to go in my community to find help.	••		(:)
15. I feel like a part of my school.			\bigcirc
16. My friends support me in hard times.			\bigcirc
17. My family supports me in hard times.			\bigcirc
18. I am treated fairly.	••		\bigcirc
19. I have opportunities to show others that I am becoming an adult and that I can act responsibly.	••		:
20. I am aware of my strengths.			
21. I participate in religious activities.			(:)
22. I think it is important to serve my community.	••		:
23. I feel secure when I am with my family or caregivers.			:
24. I have opportunities to develop skills that will be useful later in my life (such as work skills or caring for others).			
25. I enjoy the cultural and family traditions of my family or caregivers.	••		••
26. I enjoy the cultural and family traditions of my community.			\bigcirc

Please circle one answer for each question.

Page 2 of 2

 Ungar, M., and Liebenberg, L. (2011). Assessing resilience across cultures using mixed-methods: Construction of the Child and Youth Resilience Measure-28. Journal of Mixed Methods Research, 5(2), 126-149.

Liebenberg, L., Ungar, M., and Van de Vijver, F. R. R. (2012). Validation of the Child and Youth Resilience Measure-28 (CYRM-28) Among Canadian Youth with Complex Needs. Research on Social Work Practice, 22(2), 219-226.



Appendix C

CYRM-26 Spanish Translation

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	For office use only
Participant Number:	
Site ID:	
Data number:	
Date of administration:	

Child and Youth Resilience Measure (CYRM) Child Version

DIRECCIONES

A continuación se enumeran varias preguntas sobre usted, su familia, su comunidad y sus relaciones con las personas. Estas preguntas están diseñadas para ayudarnos a entender mejor cómo lidiar con la vida cotidiana y el papel que desempeñan las personas a su alrededor en la forma de lidiar con los desafíos diarios.

No hay respuestas correctas o incorrectas.

SECCION A:

POR FAVOR COMPLETE LAS PREGUNTAS A CONTINUACIÓN:

- 1. ¿Cuántos años tienes ahora?
- 2. ¿Eres un niño o una niña? _____
- 3. ¿Con quien vives? (Por ejemplo: madre, padre, tía, tío, abuelos, amigos, etc.)
- ¿Quien es tu familia? (Por ejemplo: madre, padre, hermanos o hermanas, adoptivos o adoptivos)



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SECCION C

	No	A veces	SÍ
1. Tengo personas a quienes admiro.	:	(<u>.</u>)	:
2.Coopero con la gente que me rodea.		<u></u>	
3. Obtener una educación es importante para mi.		<u></u>	
4. Sé cómo comportarme en distintas situaciones sociales.		<u>.</u>	
5. Mis padres o encargados/as me supervisan de cerca.	:	(<u>.</u>)	(\cdot)
6. Mis padres o encargados/as saben mucho acerca de mi.	:	(<u>.</u>)	(:)
7. Si tengo hambre hay suficiente comida disponible.	:	(<u>.</u>)	(\cdot)
8. Me esfuerzo por terminar lo que empiezo.	:	(<u>.</u>)	:
9. Me siento orgulloso (a) de mi herencia cultural.	:	(<u>.</u>)	:
10. A otros niños les gusta jugar conmigo.	:	(<u>.</u>)	:
11. Le hablo a mi familia acerca de cómo me siento.	:	<u>.</u>	:
12. Puedo resolver mis problemas sin lastimarme o lastimar a otros/ as.	:	(!)	(\cdot)

Por favor marque una respuesta para cada pregunta.

Page 1 of 2

	No	Sometimes	Yes
13. Me siento apoyado por mis amigos.	:		\bigcirc
14. Sé a dónde acudir en mi comunidad para recibir ayuda .	:	\bigcirc	\bigcirc
15. Me siento parte de mi escuela.	:		(\cdot)
16. Mis amigos/as me respalda en tiempos difíciles.	:		(\cdot)
17. Mi familia me respalda en tiempos difíciles.	:		:
18. Soy tratado (a) justamente.	:		\bigcirc
19. Tengo oportunidades para mostrar a otros/as que me estoy convirtiendo en un adulto y que puedo actuar de manera responsable.	:		(\cdot)
20. Conozco mis fortalezas.	:	<u></u>	\bigcirc
21. Participo en actividades religiosas.	:	<u></u>	\bigcirc
22. Pienso que es importante servir a mi comunidad.	:		
23. Me siento seguro (a) cuando estoy con mi familia y/o encargados.	:		:
 Z4. Tengo oportunidades para desarrollar destrezas que me serán útil más tarde en mi vida (tal como destrezas de trabajo o destrezas para cuidar a otros) 	:		\bigcirc
25. Disfruto las tradiciones culturales y familiares de mi familia y/o encargado/a.	:	<u>.</u>	\bigcirc
26. Disfruto las tradiciones culturales y familiares de mi communidad y/o encargado/a.		\bigcirc	\bigcirc

Page 2 of 2

 Ungar, M., and Liebenberg, L. (2011). Assessing resilience across cultures using mixed-methods: Construction of the Child and Youth Resilience Measure-28. Journal of Mixed Methods Research, 5(2), 126-149.

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Appendix D

Consent Form – English

Caregiver Consent Form

You are being asked to allow your child to participate in a research study. This form provides you with information about the study. The person in charge of this research will also describe this study to you and answer all of your questions. Please read the information below and ask any questions you might have before deciding whether or not to take part. Your child's participation is entirely voluntary. Your child can refuse to participate without penalty or loss of benefits to which they are otherwise entitled. You can stop your child's participation at any time and your refusal will not impact current or future relationships with Radford University or participating sites. To do so simply tell the researcher you wish to stop participation. The researcher will provide you with a copy of this consent for your records.

The purpose of this study is to examine the impact of group music therapy interventions on the resilience of Hispanic/Latino elementary school students (grades K-3) and their English-speaking peers. If you agree to be in this study, we will ask your child to do the following things:

- Participate in age-appropriate music experiences such as listening, playing instruments, singing, and moving to music.
- Answer questions about personal feelings regarding subjects such as school, home life, and favorite activities.

Total estimated time to participate in the study is thirteen weeks. Your child will participate in one 35-minute music therapy session per week for twelve weeks, plus two 20-minute administrations of a proctored survey. Your child may be randomly selected for a non-experimental control group. In this case, your child will only be asked to take two the 20-minute surveys and will not participate in the music therapy group.

Risks of being in the study: Your child will not encounter any risk greater than that experienced in a typical school environment.

Benefits of being in the study: Benefits of participation in this study may include increases in vocabulary in both English and Spanish, improved resilience (the ability to access external resources for personal well-being), and increases in music skills and socialization/communication skills.

Compensation: No compensation will be offered for participation in this study.

Confidentiality and Privacy Protections:

All participants in this study will be given a number code, which will be used to identify all of the data on the computer databases and paper documents. All data and paper documents will be kept in a locked cabinet in the clinical supervisor's office for a minimum of three years. The name and number code key will be kept in a locked filing cabinet in a separate office and will

remain separate from the data. Number-coded data will be kept on a password-protected computer in the possession of the student researcher.

The data resulting from your participation may be made available to other researchers in the future for research purposes not detailed within this consent form. In these cases, the data will contain no identifying information that could associate you with it, or with your participation in any study.

The records of this study will be stored securely and kept confidential. Authorized persons from Radford University and members of the Institutional Review Board have the legal right to review your child's research records and will protect the confidentiality of those records to the extent permitted by law. All publications will exclude any information that will make it possible to identify your child as a subject. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study.

Contacts and Questions:

If you have any questions about the study, please ask now. If you have questions later, want additional information, or wish to withdraw your child's participation contact the Primary Investigator, [Name] (email) or the Researcher, [Name] (email). You may also call [Primary Investigator] at [Phone].

If you have questions about your child's rights as a research participant, complaints, concerns, or questions about the research please contact [Name, Email, Phone].

You will be provided a copy of this consent form.

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 him or her to participate in the study. If you later decide that you wish to withdraw your permission for your child to participate in the study, simply tell me. You may discontinue his or her participation at any time.

Printed Name of Child

Printed Name of Parent(s) or Legal Guardian

Signature of Parent(s) or Legal Guardian

Date

Signature of Investigator

Date

Appendix E

Consent Form - Spanish

El Formulario de Consentimiento para el Cuidador

Le están pidiendo permiso para que su hijo participe en un estudio. Este formulario le da información sobre el estudio. La persona encargada del estudio también le explicará sobre el estudio y contestará las preguntas que tenga. Por favor lea toda la información de abajo y haga cualquier pregunta que tenga antes que decida participar. La participación de su hijo es completamente voluntaria. Su hijo puede rechazar participación sin penalización o pérdida de los beneficios a los que tiene derecho. Usted puede detener la participación de su hijo en cualquier momento y su rechazo no impactará relaciones presentes o futuras con la universidad de Radford ni con sitios participantes. Para detener la participación de su hijo simplemente hágale saber al investigador que no desea seguir con el estudio. El investigador le va a producir una copia de este formulario de consentimiento para sus archivos.

El propósito de este estudio es para examinar el impacto que tienen las intervenciones de musicoterapia grupal a la resistencia de estudiantes primarias hispanos/latinos (grados K-3) y sus compañeros de habla inglesa.

Si acepta participar en este estudio, le preguntaremos a su hijo lo siguiente:

- Que participe en experiencias musicales apropiadas para su edad como escuchar música, tocar instrumentos, cantar y moverse a la música.
- Que responda a preguntas sobre sentimientos personales con respeto a temas como la escuela, la vida en casa, y las actividades favoritas.

El tiempo total estimado para participar en el estudio es trece semanas. Su hijo participará en una sesión de terapia musical de 35 minutos por semana para doce semanas, y adicionalmente participará en dos encuestas supervisadas administrativos de 20 minutos. Su hijo podrá ser seleccionado para el grupo de control no experimental. En este caso, se le pedirá a su hijo que tome solamente las dos encuestas de 20 minutos y no participará en el grupo de musicoterapia.

Riesgos del estudio: Su hijo no encontrará ningún riesgo mayor de lo que experiencia en un ambiente escolar típico.

Beneficios del estudio: Los beneficios de participar en este estudio podrá incluir aumentos de vocabulario en ambos inglés y español, una resistencia mejorada (la capacidad de conseguir acceso a recursos externos para el bien estar), y el aumento de habilidades musicales y habilidades de socialización y comunicación.

Compensación: No se ofrecerá ninguna compensación para la participación de este estudio.

Protecciones de Confidencialidad y Privacidad:

Todos los participantes de este estudio recibirán un código numérico que se utilizará para identificar todos los datos en el base de datos informáticos y en documentos en papel. Se mantendrá todos los datos y documentos en un armario cerrado con llave en la oficina del supervisor clínico por un mínimo de tres años. La clave con los nombres y los códigos numéricos se mantendrán en un armario cerrado con llave en una oficina separada y permanecerá separado de los datos. El estudiante investigador mantendrá los datos número codificados en una computadora con contraseña protegida.

Aunque este formulario de consentimiento no lo detalle, pueda que en el futuro, los datos que resultan de su participación se haga disponibles a otros investigadores para usos de investigación. En esos casos, los datos no contendrán información de identificación que se pueda asociar con usted ni con su participación en cualquier estudio.

Los archivos de este estudio se guardarán de forma segura y se mantendrán confidenciales. Personas autorizadas de la universidad de Radford y miembros de la Junta de Revisión Institucional tienen derecho legal a revisar los archivos del estudio de su hijo y protegerán la confidencialidad de esos archivos a la medida permitida por la ley. Todas las publicaciones excluirán cualquier información que permita identificar a su hijo como sujeto de este estudio. A lo largo del estudio, los investigadores le notificarán sobre nueva información que pueda estar disponible y que pueda afectar su decisión en permanecer en el estudio.

Contactos y Preguntas:

Si tiene cualquier pregunta sobre el estudio por favor pregunte ahora. Si tiene preguntas más tarde, quiere información adicional, o desea sacar a su hijo del estudio póngase en contacto con el investigador principal, [Nombre y Contacto] o el investigador [Nombre y Contacto]. También podría llamar a [Investigador Principal, Teléfono].

Si tiene preguntas sobre los derechos de su hijo como un participante de estudio o si tiene quejas, preocupaciones, o preguntas sobre el estudio, por favor contáctese con [Nombre y Contacto].

Se le proveerá una copia de este formulario de consentimiento.

Está tomando la decisión de permitir que su hijo participe en este estudio. Su firma debajo indica que ha leído la información proporcionada de arriba y que ha decidido permitir que su hijo participe en el estudio. Si luego decide retirar su permiso que su hijo participe en el estudio simplemente contácteseconmigo. Puede discontinuar la participación de su hijo en cualquier tiempo.

Nombre del Niño, Impreso

Nombre del Padre o Cuidador Legal, Impreso

Firma del Padre o Cuidador Legal

Fecha

Firma del Padre o Cuidador Legal

Fecha

Appendix F

TREND Statement Checklist

TREND Statement Checklist

Paper	Item	Descriptor		rted?
Section/ Topic	No		\checkmark	Pg #
Title and Abstr	act			
Title and	1	 Information on how unit were allocated to interventions 	\checkmark	ii
Abstract		Structured abstract recommended		ii
		 Information on target population or study sample 	\sim	ii
Introduction				
Background	2	 Scientific background and explanation of rationale 	\checkmark	1-24
		 Theories used in designing behavioral interventions 	\checkmark	1-24
Methods				
Participants	3	 Eligibility criteria for participants, including criteria at different levels in 		
		recruitment/sampling plan (e.g., cities, clinics, subjects)	\checkmark	27-28
		 Method of recruitment (e.g., referral, self-selection), including the 		
		sampling method if a systematic sampling plan was implemented	\checkmark	27-28
		Recruitment setting	\checkmark	28
		 Settings and locations where the data were collected 	\checkmark	31
Interventions	4	 Details of the interventions intended for each study condition and how 		31-34
		and when they were actually administered, specifically including:	\checkmark	71-74
		 Content: what was given? 	\checkmark	71-74
		 Delivery method: how was the content given? 	\checkmark	31-34
		 Unit of delivery: how were the subjects grouped during delivery? 	\checkmark	33
		 Deliverer: who delivered the intervention? 	<u> </u>	33
		 Setting: where was the intervention delivered? 	\checkmark	33
		 Exposure quantity and duration: how many sessions or episodes or 		
		events were intended to be delivered? How long were they		33
		Intended to last?	×	
		 Time span: now long was it intended to take to deriver the intervention to each unit? 	1	33
		Activities to increase compliance or adherence (e.g. incentives)	Ľ.	35
Objectives	5	Specific objectives and hypotheses	Ľ	32 24
Outcomes	6	Clearly defined primary and secondary outcome measures	Ľ.	36
	-	Methods used to collect data and any methods used to enhance the	Ť	
		guality of measurements	1	36
		 Information on validated instruments such as psychometric and biometric 	Ť	<u> </u>
		properties	1	26-27
Sample Size	7	 How sample size was determined and, when applicable, explanation of any 		
		interim analyses and stopping rules	\checkmark	27-28
Assignment	8	 Unit of assignment (the unit being assigned to study condition, e.g., 		
Method		individual, group, community)	\checkmark	28
		 Method used to assign units to study conditions, including details of any 		
		restriction (e.g., blocking, stratification, minimization)	\checkmark	27-28
		Inclusion of aspects employed to help minimize potential bias induced due		
		to non-randomization (e.g., matching)	\checkmark	27-28

		-		
Blinding	9	Whether or not participants, those administering the interventions, and		
(masking)		those assessing the outcomes were blinded to study condition assignment;		
		if so, statement regarding how the blinding was accomplished and how it		
		was assessed.		
			\checkmark	28
Unit of Analysis	10	 Description of the smallest unit that is being analyzed to assess 		
		intervention effects (e.g., individual, group, or community)	\checkmark	35
		 If the unit of analysis differs from the unit of assignment, the analytical 		
		method used to account for this (e.g., adjusting the standard error		
		estimates by the design effect or using multilevel analysis)	×	N/A
Statistical	11	 Statistical methods used to compare study groups for primary methods 		
Methods		outcome(s), including complex methods of correlated data	\checkmark	36
		 Statistical methods used for additional analyses, such as a subgroup 		
		analyses and adjusted analysis	\checkmark	36
		 Methods for imputing missing data, if used 	X	N/A
		 Statistical software or programs used 	\checkmark	28
Results				
Participant flow	12	 Flow of participants through each stage of the study: enrollment, 		
		assignment, allocation, and intervention exposure, follow-up, analysis (a		30
		diagram is strongly recommended)	\checkmark	30
		 Enrollment: the numbers of participants screened for eligibility, 		
		found to be eligible or not eligible, declined to be enrolled, and		20
		enrolled in the study	<u>~</u>	30
		 Assignment: the numbers of participants assigned to a study 		
		condition	<u>~</u>	30
		 Allocation and intervention exposure: the number of participants 		
		assigned to each study condition and the number of participants		20
		who received each intervention	×	50
		 Follow-up: the number of participants who completed the follow- up and id and same late the following (i.e., last to following) but 		
		up or did not complete the follow-up (i.e., lost to follow-up), by		20
		study condition	×	50
		 Analysis: the number of participants included in or excluded from the use is analysis build and the second state. 		
		the main analysis, by study condition	×	30
		 Description of protocol deviations from study as planned, along with 		29.41
Describerant	4.7	reasons	<u>×</u>	33-41
Recruitment	13	Dates defining the periods of recruitment and follow-up	X	N/A
Baseline Data	14	 Baseline demographic and clinical characteristics of participants in each 		25
		study condition	<u>~</u>	25
		 Baseline characteristics for each study condition relevant to specific 		
		disease prevention research	X_	N/A
		 Baseline comparisons of those lost to follow-up and those retained, overall 		
		and by study condition	X	N/A
		 Comparison between study population at baseline and target population 		
		of interest	X	N/A
Baseline	15	 Data on study group equivalence at baseline and statistical methods used 		
equivalence		to control for baseline differences		
				N/A
	1		IX	N/A

TREND Statement Checklist
TREND State	mene	checkhise		
Numbers	16	Number of participants (denominator) included in each analysis for each		
analyzed		study condition, particularly when the denominators change for different		
		outcomes; statement of the results in absolute numbers when feasible	\checkmark	30
		 Indication of whether the analysis strategy was "intention to treat" or, if 		
		not, description of how non-compliers were treated in the analyses	\times	N/A
Outcomes and	17	For each primary and secondary outcome, a summary of results for each		
estimation		estimation study condition, and the estimated effect size and a confidence		
		interval to indicate the precision	\checkmark	36-37
		Inclusion of null and negative findings	\checkmark	36-37
		 Inclusion of results from testing pre-specified causal pathways through 		
		which the intervention was intended to operate, if any	×	N/A
Ancillary	18	Summary of other analyses performed, including subgroup or restricted		
analyses		analyses, indicating which are pre-specified or exploratory	×	N/A
Adverse events	19	Summary of all important adverse events or unintended effects in each		
		study condition (including summary measures, effect size estimates, and		
		confidence intervals)	\times	N/A
DISCUSSION				
Interpretation	20	 Interpretation of the results, taking into account study hypotheses, 		
		sources of potential bias, imprecision of measures, multiplicative analyses,		
		and other limitations or weaknesses of the study	\checkmark	39-41
		 Discussion of results taking into account the mechanism by which the 		
		intervention was intended to work (causal pathways) or alternative		
		mechanisms or explanations	\checkmark	39-43
		• Discussion of the success of and barriers to implementing the intervention,		
		fidelity of implementation	\checkmark	39-43
		 Discussion of research, programmatic, or policy implications 	\checkmark	39-43
Generalizability	21	Generalizability (external validity) of the trial findings, taking into account		
		the study population, the characteristics of the intervention, length of		
		follow-up, incentives, compliance rates, specific sites/settings involved in		
		follow-up, incentives, compliance rates, specific sites/settings involved in the study, and other contextual issues	\checkmark	41-42
Overall	22	follow-up, incentives, compliance rates, specific sites/settings involved in the study, and other contextual issues General interpretation of the results in the context of current evidence	~	41-42

TREND Statement Checklist

From: Des Jarlais, D. C., Lyles, C., Crepaz, N., & the Trend Group (2004). Improving the reporting quality of nonrandomized evaluations of behavioral and public health interventions: The TREND statement. American Journal of Public Health, 94, 361-366. For more information, visit: http://www.cdc.gov/trendstatement/

Appendix G

Institutional Review Board Approval Letter

Radford University's Institutional Review Board P.O. Box 6926 Radford, VA 24142 | Phone: (540) 831-5290 | Fax: (540) 831-6636 | irb-lacuc@radford.edu



MEMO DATE:	30-Oct-2017			
TO:	Winter, Patricia			
FROM:	Laura Noll <u>lnoll@radford.edu</u>			
	Radford University IRB			
RE:	Approval for FY18-012: The Effects of Music Therapy Interventions to Support the Development of Resilience in Elementary School Children of Varying Primary Language Backgrounds.			
STUDY TITLE:	The Effects of Music Therapy Interventions to Support the Development of Resilience in Elementary School Children of Varying Primary Language Backgrounds.			
IRB REFERENCE #:	FY18-012			
SUBMISSION TYPE: Review				
ACTION:	Under Development			
EFFECTIVE DATE:	30-Oct-2017			
EXPIRATION DATE	: 29-Oct-2018			
REVIEW TYPE:	Full Board Review			

This is to confirm that the above-references study submitted for Full Committee Review to Radford University's Institutional Review Board (IRB) has been granted approval.

Your IRB-sanctioned approval ends on 29-Oct-2018, by which date a closure report is due. If you wish to continue your research beyond this date, you must request a continuance no later than 10 days prior to the expiration of this approval. Because your study requires documentation of informed consent, you must use the stamped copy of your approved consent document.

If you should need to make changes in your protocol, please submit a request for modification before implementing the changes. Modifications are made via the InfoEd system. Please contact our office for assistance, if needed.

As the principal investigator for this project, you are ultimately responsible for ensuring that your study is conducted in an ethical manner. You are also responsible for filing all reports related to this project.

If you have any questions, please contact Laura Noll at (540) 831-5290 or <u>Inoll@radford.edu</u>. Please include your study title and reference number in all correspondence with this office.

Good luck with this project!

Appendix H

Hello Song

This song structure was utilized in varying formats to gain information about each subject. The initial presentation of the song is shown, and a sample verse is listed. Verses can be adapted to ask varied questions based on the needs of the client. Blanks in the lyrics were represented musically by a caesura; the initial tempo (132 BPM) was resumed after subjects offered a spoken or sung answer. Guitar accompaniment consisted of an upbeat, syncopated strumming pattern.



Hello Song

Alternate verse 1:

¡Hola, hola! ¡Hola, hola! ¡Hola, hola! ¡Hora de música!

Sample verses:

Your name is ____! Your name is ____! Your name is ____! It's music time!

Appendix I

Interventions Used

- 1. "Hot and Cold:" Subjects were asked to identify the difference between "loud," "soft," "fast," and "slow" sounds as played first on the guitar, and then with egg shakers. Subjects were split into two teams; each team included both English-speaking children and DLLs. Team A was given a small object to hide somewhere in the room as Team B closed their eyes and counted to 20 in either English or Spanish. When the object was hidden, members of Group B opened their eyes and attempted to find the object through the interpretation of musical cues provided by Team A. Team A played egg shakers loudly and quickly as Team B neared the object, and played softly and slowly as the team moved farther away. Once Team B found the hidden object, group roles were switched. Subjects requested opportunities for individual leadership as well, so the intervention was also adapted for a single "hider" and multiple "finders."
- 2. Rhythmic Improvisation and Mirroring: Subjects were asked to choose from a selection of hand drums and auxiliary percussion instruments, and to play along with the researcher-provided guitar accompaniment. Each subject was given an opportunity to play using a self-directed style, and the group was prompted to mirror using their own instruments. After each subject had taken a turn, the group was prompted to play according to differing musical styles offered by the researcher using the guitar. Subjects adapted their playing styles to match a 12-bar blues progression, a syncopated and rhythmic vi-IV-I-V progression, a slow I-IV-V-I progression in ³/₄ time, and a finger-picked I-V-vi-IV progression. Subjects were verbally encouraged when unique or

72

unprecedented playing styles (such as tapping the drum with a maraca) were implemented.

- 3. Creative Movement to Music: The researcher played various instruments (guitar, tubano, xylophone, auxiliary percussion) and prompted individual subjects to "move like the music." Other group members were encouraged to mirror the movements, and to incorporate variation if desired. After subjects became comfortable with the concept of interpretive movement, individuals were chosen to lead the group by playing as desired on the aforementioned instruments. Choice of instrument, playing style, and length of play varied from subject to subject, and each subject had a turn to lead. The researcher verbally encouraged mirroring of other group members, and praised subjects for demonstrating unique or unprecedented styles of movement (such as crawling, rolling, or isolated fine motor movements).
- 4. Each subject was given a set of rhythm sticks and was asked to tap the floor in time with the researcher. The researcher modeled a pattern with the rhythm sticks, and subjects were asked to repeat the same rhythm. This continued until all group members were able to repeat the rhythm accurately. Subjects took turns playing simple rhythms; the group recreated the rhythms provided by each subject.
- 5. Freeze Game: Subjects were encouraged to dance to music offered by the researcher on guitar. Music was offered in varying styles (12-bar blues, lullabies, pop accompaniments, atonal progressions, etc.), and subjects were asked to move differently in response to style changes. When the music stopped, subjects were prompted to "freeze" in place. The researcher alternated between music styles to promote continued engagement throughout the intervention.

6. Styles from a Hat: Subjects were prompted to choose a slip of paper from two cups. One cup contained the names of "noisemakers" (i.e., egg shakers, hands, feet, drums, etc.), and the other contained varying "style words" (i.e., sad, nervous, loud, sharp, cold, etc.). Subjects were challenged to present the chosen style using the chosen "noisemaker," and other group members attempted to guess the "style word" being depicted. Each subject was provided with a turn. If group members could not guess the style word, the "leader" was prompted to use other methods (facial expressions, body movements, etc.) to encourage further guesses.

Appendix J

Goodbye Song

The goodbye song was presented at a slower tempo (100 BPM) utilizing finger picking for arpeggiation over a rolling eighth note figure. Like the hello song, the goodbye song was adapted as appropriate to summarize the preceding session.

Goodbye Song

