

MAUREEN HARRIS



MUSIC AND THE YOUNG MIND

ENHANCING BRAIN DEVELOPMENT
AND ENGAGING LEARNING



Music and the Young Mind

Enhancing Brain Development and Engaging Learning

MAUREEN HARRIS

Published in partnership with
MENC: The National Association for Music Education

ROWMAN & LITTLEFIELD EDUCATION
Lanham • New York • Toronto • Plymouth, UK

Published in partnership with
MENC: The National Association for Music Education

Published in the United States of America
by Rowman & Littlefield Education
A Division of Rowman & Littlefield Publishers, Inc.
A wholly owned subsidiary of The Rowman & Littlefield Publishing Group, Inc.
4501 Forbes Boulevard, Suite 200, Lanham, Maryland 20706
www.rowmaneducation.com

Estover Road
Plymouth PL6 7PY
United Kingdom

Copyright © 2009 by MENC: The National Association for Music Education

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of the publisher.

British Library Cataloguing in Publication Information Available

Library of Congress Cataloging-in-Publication Data

Harris, Maureen, 1956–

Music and the young mind : enhancing brain development and engaging learning /
Maureen Harris.

p. cm.

“Published in partnership with MENC: The National Association for Music
Education.”

ISBN 978-1-60709-061-8 (cloth : alk. paper) — ISBN 978-1-60709-062-5 (pbk. :
alk. paper) — ISBN 978-1-60709-063-2 (ebook)

1. Preschool music—Instruction and study. 2. Early childhood education. I. Harris,
Maureen, 1956– II. MENC, the National Association for Music Education (U.S.) III.
Title.

MT1 .H228 2009

372.87/049—dc22

2009012202

™ The paper used in this publication meets the minimum requirements of
American National Standard for Information Sciences—Permanence of
Paper for Printed Library Materials, ANSI/NISO Z39.48-1992.
Manufactured in the United States of America.

Contents

List of Figures	v
Foreword by Susan Kenney	vii
Acknowledgments	ix
Introduction	xi
1 Brain Research and How Children Learn	1
2 Biology and Music—Tapping the Global Rhythm	11
3 Healing	15
4 Gifted Children	21
5 Teacher Training	29
6 Appropriate Curricula	37
7 Multicultural Integration	45
8 A Year’s Music Curriculum	57
9 Lesson Plans of Basic Concepts	67
10 Resource Guide	105
11 Let’s Get Started	111
12 Tomorrow’s World	117
Appendix A: Songs Listed Alphabetically	121
Appendix B: Action Songs	123
Appendix C: Tracks on CDs by Lesson Plan	125
References	129
About the Author	137

List of Figures

9.1	White Montessori bells with first, fourth, and seventh blue bells in front at right end	90
9.2	Blue bell placed in front of white space to far left of bell setup	91
9.3	Blue bell placed onto its white space	92
9.4	Staff board with treble clef and disc on G	97
9.5	Scale flashcards	99
9.6	Scale flashcards arranged vertically	101

Foreword

Formal study of early childhood music in the United States probably began with the Iowa Child Welfare Research Station preschool laboratory on the University of Iowa campus in the 1920s and 1930s. There research on rhythmic and vocal behaviors of three- to five-year-old children was conducted and published. In the 1940s, researchers conducting the Pillsbury studies at Santa Barbara, California, observed and recorded the creative musical behaviors of children. But it was not until 1969 that preschool music education was identified as a goal by the Music Educators National Conference (now MENC: The National Association for Music Education). In that year, the Goals and Objectives (GO) Project identified thirty-five goals and objectives for improving American music education. One of the goals was to expand music education to include preschool music. Related goals challenged music educators to expand music education research and to build effective relationships with other organizations interested in high-quality education for children.

Events that followed continued to support preschool music education. In 1974, *The School Music Program: Description and Standards* (MENC) described important guidelines for music programs for early childhood. The Ohio State University sponsored two conferences (1977, 1979) dealing with music in early childhood as part of their *Current Issues in Music Education* series, and faculty there were instrumental in establishing the MENC Early Childhood Music Special Research Interest Group (ECM-SRIG) in 1980 to encourage research projects and to disseminate research information to childcare workers and teachers. The Music in Early Childhood Conference held at Brigham Young University in 1984 brought together music educators and preschool educators to further encourage effective relationships between the two populations. And in 1994, the National Standards for Music Education included clear guidelines and standards for prekindergarten music education. These and other efforts created a rich environment for early childhood music education growth.

Research studies, articles, books, and curriculum began to flourish as the twentieth century came to a close. Business entered the preschool music world as programs were organized to train interested adults to provide music education for young children and families. Initiatives such as the U.S. Department of Education's Start the Music Summit in 2000, sponsored by MENC, and the National Association of Childhood Education International (NAEYC) encouraged continuing dialogue between music and early childhood educators and took action to ensure that preschool music education be an important part of the nation's continuing educational efforts.

As we enter the twenty-first century, many methods and models of high-quality early childhood music programs are available for music and early childhood educators. *Music and the Young Mind* provides one more option that is comprehensive and provides ready-to-use guidelines. Maureen Harris has provided a summary of the latest research in child development, music development, brain research, and the biology of music-making. Based on the research, she outlines a curriculum that is workable for both music specialists and early childhood educators. Month-by-month lesson plans and recordings provide easy-to-follow sequential guidelines for teaching music skills and concepts. Exploration of songs and instruments from countries around the world speak to the multicultural climate of the twenty-first century. One of the unique features of *Music and the Young Mind* is the inclusion of Montessori's philosophy and didactic music materials. Harris is exposing the general education profession to materials and processes that have heretofore been available primarily to Montessori teachers. Using MENC's National Standards and NAEYC guidelines, she has created a developmentally appropriate curriculum enriched with Montessori materials, philosophy, and strategies.

In her final chapter, "Tomorrow's World," Harris invites us to consider the impact that the education of young children may have on the future success of society. She reminds us that tomorrow's leaders are today's children, and that it is the early childhood environment that largely determines the characteristics and behaviors children form to meet life's challenges. She

discusses the power of music instruction and how it might help promote a generation of responsible citizens. She calls on all of us to “work together globally, to save planet Earth by enriching the creative minds of today’s children.”

Caregivers at the early childhood level and music educators have much to gain by studying this informative, thought-provoking publication. From specific teaching ideas to situating music education within a global perspective, *Music and the Young Mind* provides something for everyone interested in the music education of children. It is a welcome addition to the world of early childhood music education.

Susan Kenney
Associate Professor of Music Education
Brigham Young University—Salt Lake City

Acknowledgments

Thanks to all whose support and dedication have brought me to where I am today!

Most of all I extend a heartfelt thank-you to Miss Julie Roy and teachers, students, and parents of the Children's House Montessori for their assistance in conducting the research upon which *Music and the Young Mind* was built.

I am especially grateful to the MENC editors Frances Ponick and Linda Brown for answering all of my questions and steering me in the right direction whenever I had a problem.

To trusted and treasured colleagues, Dr. E. Gordon and Dr. C. Taggart, Michigan State University; Dr. R. Upitis and Dr. K. Smithrim, Queens University; and Dr. S. Curtis, Concordia University, whose expertise and insights were invaluable to me. To some of the great masters Bach, Mozart, Beethoven, Verdi, Gershwin, and Porter, whose music offered inspiration during the early hours of the morning.

I am indebted to my wonderful, supportive family—my loving Irish parents who gave me an enriched musical beginning to a journey filled with the love of music; my husband Brian for his continued support and encouragement; my daughter Leah for her musical artistry; and my son Scott for his quiet wisdom.

Finally, to all the children of the world, it is my wish that through the global language of music you find peace! My hopes are for the dreams of the children of tomorrow.

Introduction

Is music part of our being? Does music make us smarter? When should music instruction begin, and how? This book is an attempt to answer these questions while offering educators a valuable insight into and suggestions for the musical education of the young mind.

Plato wrote, “Musical training is a more potent instrument than any other for education” (1883, p. 319). This observation was made during a time when music was at the core of society—a time when music was as commonplace as language, necessary for communication, and mandatory for ritual and other forms of celebration. The twenty-first century is worlds apart from the time of Plato, and yet what makes us unique as human beings remains the same.

How can educators put research into practice and benefit from the wealth of knowledge and research acquired over the centuries on the power of music?

The opening section of this book reviews the most current literature and research on music and brain development and addresses explicit links between music and other domains, in particular mathematics and language.

The second section contains chapters on the therapeutic and biological function of music, from music therapy and its value in reaching the special needs child to the positive ramifications for the gifted child. The healing power of music and children’s spiritual well-being are discussed, and the age-old questions about human communication are also addressed, such as, What role does music play in human communication given its existence since the beginning of civilization. Is it the essence of who we are?

Chapters 5 and 6 address sustaining teacher-student relationships and the development of the whole child. This discussion explains the beginning steps in developing a successful music curriculum for young children. It demonstrates how to develop a musical repertoire of songs suitable for the young voice and placed within the correct vocal range. Appropriate percussion instruments for use with young children are discussed with examples of how to hold and use each instrument, followed by music compositions that demonstrate specific instruments of the orchestra.

The multicultural chapter suggests ways that early childhood music settings should be formulated to maximize the benefits of a variety of cultural values and practices. With the current explosion of music available through the Internet, multicultural music is more readily obtainable than ever. A timeline of composers and music from ancient times to the present day is discussed along with descriptions of diverse ethnic music styles from around the world.

Next, in chapter 8, a step-by-step guide to music education for the educator and child includes lesson plans for each basic music concept being studied, with suggested songs (available on the accompanying CDs) and musical activities for demonstration purposes. The lessons are set out in a developmentally appropriate sequence for young children and are formatted in an easy-to-follow manner. This section includes a comprehensive list of recorded music, musical websites, and resource materials to further prepare and assist the educator for working in the classroom. Following and practicing these steps will help build the educator’s confidence in her ability to teach music to the young child.

The remaining chapters offer suggestions on implementing the lessons and theories presented, whether in the early childhood classroom or a private setting. The required space, logistics, materials, business plans, safety and insurance concerns, record keeping, and parent issues are briefly addressed. The new or experienced music or nonmusic teacher will benefit from following this research-based, tried-and-tested approach. I would also recommend adding and documenting personal observations over time and sharing these resources with fellow educators.

The finale or coda describes possible new directions in music education for young children. Adhering to the high levels of engagement evident in children's play and creating an environment that is sensitive to the spiritual, cultural, and emotional background of the child are the foundations upon which the musical development of the child can flourish.

As you read this book and gain confidence in teaching music to young children, it is my hope that you will also regard music as a biological human need, an incredible vehicle for enhancing intelligence, and a means of connecting and uniting people around the world.

CHAPTER 1

Brain Research and How Children Learn

What the Experts Say

Research suggests that young children have a tremendous capacity to learn from the moment they are born. These first years of life are crucial to a child's cognitive development. This chapter highlights the most recent research on brain development and the role music plays in the development of the young child.

With the help of new technology, brain researchers are gaining insight into what promotes early development—not only intellectual growth, but healthy social and emotional development as well. In the first years, the young brain rapidly builds the complex networks of brain structure and function necessary for mature thought processes to take place. Early experiences have a decisive impact on the architecture of the brain and the nature and extent of future capacities. While genes influence some of this, positive social interactions and stimulating experiences are crucial. Neurologists and psychologists, with the help of recent research, can now confidently argue that how children develop, learn, and grow depends on the continual interplay between nature and nurture.

In the early twentieth century, in contrast to the opinion of the day (which emphasized what children lacked), Swiss psychologist Jean Piaget proposed that the mind of the child is best described in terms of complex cognitive structures. This sparked the birth of a substantial body of research emphasizing the remarkable abilities of the child and his role as active learner (Gelman & Brown, 1986). Research by Thatcher, Walker, and Giudice (1987) found overall continuous cognitive growth, with examples of growth spurts in specific regions at specific times, thus supporting Piaget's stages of development.

By the end of the sixth month of fetal development, most of the brain cells are in place (Berk, 2004). The brain of the newborn child has about 100 billion neurons (cells that transmit nerve impulses in the human body), most of the neurons it will ever have (Schwartz & Begley, 2002). At birth, the brain is 30 percent of its adult weight, by age two it reaches 70 percent, and by age six it is 90 percent (Begley, 1997).

The interconnections among the brain cells are most important to further growth and development. These neuronal connections multiply through stimulating experiences during a child's early years and are necessary for further development of the neural networks needed in later processing (Olsho, 1984; Trehub, Bull, and Thorpe, 1984). Not all neural development is necessary. In a process called neural pruning, the child's brain begins a process of adjustment between the ages of 7–11 and 9–13 where spatially localized loss of brain tissue of up to 50 percent takes place (Thompson & Nelson, 2001). According to researcher Janet DiPietro (2000), the child's brain begins a process of adjustment that eliminates all unnecessary associations in order to concentrate on the maintenance of those associations that it uses. DiPietro suggests that the brain makes these associations at a very rapid pace in response to the various stimuli in the young child's environment and attests to the theory that the first few years of a child's life are crucial to her future learning development.

Exposure to stimulation, such as sight, sound, touch, taste, and smell lead to growth and development of motor, emotional, behavioral, cognitive, and social functioning (Perry, 2000). Experiments with lab animals at the University of Illinois showed that animals in a stimulating environment developed 25 percent more synapses per nerve cell and 80 percent more blood vessels to nourish each cell (Nash, 1997). In contrast, children raised in an impoverished environment who are not exposed to this sensory stimulation create fewer neuronal connections and miss the opportunity to program the brain for later learning (Hodges, 2000). In fact they will develop a brain that is 20–30 percent smaller than normal for their age. A child reared in a bilingual home can easily learn two languages, whereas the child spoken to in only one language loses the ability

to either hear or reproduce certain sounds of different languages. Similarly, a child exposed to only the music of one culture may find it difficult to produce or apprehend the nuances of other music (Patel et al., 2004).

On the other hand, optimal periods of growth are considered as times when it is most easy to learn. Although learning can take place at a later stage, it is more difficult, for example, to learn a second language or musical instrument as an adult. Studies by Flohr, Persellin, and Miller (1996 and 1993) concluded that young children exposed to music or receiving music instruction had the ability to detect pitch variations in both music and language better than those children who had not learned music.

How Do Children Learn?

Olsho (1984) showed that during the early months and years of life, the child's brain expands at a pace never matched in later years. Olsho thus believed early experiences to be crucial to the developing architecture of the young brain.

More recently, Edwin Gordon (2003) has argued that a child who is not exposed to music at a young age is deprived of the optimal time for learning and development. Because neural connections are responsible for all types of intelligence, a child's brain develops to its full potential only through exposure to the necessary enriching experiences in early childhood (Hargreaves & Davis, 2000).

Piaget concluded that the young mind functioned through complex cognitive structures where cognitive development proceeded through certain age-appropriate developmental stages with each based upon very different cognitive schemes. His observation of infants led to the conclusion that their responses to environmental stimulation promoted gradual intellectual development during the first two years. In contrast, Gibson (1969) proposed that learning proceeds rapidly due to the initial availability of environmental stimulation, while Vygotsky (1978) emphasized the social environment and the role support and assistance play in the development of thinking in the young child. Despite the contrasting theories, all would agree that the child is an active learner with the ability to assemble and organize material.

The Effect of Music on Brain Functions

The value of music in the education of the child is the focus of much discussion in education today. Cross-cultural studies continue to confirm that music is universal and very much a part of what it means to be human.

Elliott Eisner (1994), who is particularly known for his contributions to school reform in North America, called for the evaluation of the impact of music programs and discovered positive effects on other aspects of living and learning. Reported benefits of the arts included the development of the imagination (Greene, 1995); greater motivation to learn, increased student creativity, lowered dropout rates, and increased social skills (Catterall, 1998). Researchers also reported that students involved in music exhibited higher academic achievement than students not involved in music (Catterall, 1998; Catterall, Chapleau, & Iwanga, 1999).

According to Eisner, the arts were particularly important for experiencing the joy of creating, developing attention to detail, and learning ways of expressing thoughts, knowledge, and feelings beyond words. He suggested that the arts make distinct contributions to learning and may play a part in students' achievement gains. Some researchers suggest that there are specific cognitive links among some of the arts disciplines and other participants—such as a proposed link between music and mathematics—or that perhaps music offers a way for students to become more motivated to learn. Though researchers have not yet proven what aspect of music education causes particular student achievement, current research evidence clearly identifies the benefits of learning through the arts (Vaughn, 2000; Dewey, 1934; Gardner, 1973).

Sound is the most prenatally usable stimulus, and the human fetus is exposed to many environmental sounds, in addition to the mother's voice, breathing, and movements. The fetal auditory system begins to process sounds between 16 and 20 weeks and reaches adult abilities of development by birth (Lecanuet, 1996). Fetal responses make this development apparent. A baby's preference can be monitored by the intensity in which she sucks a pacifier. Researchers used this method to study babies' preferences for different sounds and discovered that newborns prefer the sound of their mother's voices (DeCasper & Fifer, 1980). Further studies showed that fetuses at 29–37 weeks gestation showed specific behavioral responses to tunes played earlier in pregnancy. Babies studied at 2–4 days of age who had been exposed to a melody repeatedly while their mothers were pregnant, exhibited changes in heart rates and movements when the same melody was presented after birth. In both experiments, behavioral responses were specific to the tune to which they had been exposed (Lecanuet, 1996).

These results indicated that prenatal hearing and the learning and remembering of a melody occurred not only before birth but actually before or at the beginning of the third trimester (Hepper, 1991). The heart rate responding to sound begins at about twenty weeks (Lecanuet, 1996), and a musical slow beat reduces stress while a faster beat increases stress. Classical music played at a rhythm of sixty beats per minute, which is equivalent to that of a resting human heart, has the potential to encourage creative and intellectual development for the unborn child (Verny, 1981).

Anthropologists tell us that humans have always used language and music as modes of expression (Blacking, 1973). A child, regardless of environment or experience, will respond to a sung lullaby. However, because music extends beyond the language of one group of people, it has even more power to touch us. In a rather interesting study on the sound making of animals, Brody (1991) concluded that territoriality, signaling, courtship, and mating served as the motivators for the production of sound rather than humans' desire for aesthetic pleasure. Animals also relied on frequency analysis (D'Amato, 1988) as opposed to the human preference of relative pitch (Trehub, Bull, & Thorpe, 1984), such as the ability to recognize a familiar song regardless of the pitch of the starting note.

While empirical evidence is incomplete and studies have not yet demonstrated the success of prenatal music education, research clearly demonstrates that the first years in a child's life constitute an extremely important time when music can stimulate the development of nerve connections among brain cells for optimal cognitive development.

A study by Whitwell (1997) dealt with the left-brain/right-brain issue and showed that talking about music used the left side of the brain, while creatively producing music used the right side. Hickerson (1983) compared the performance of the left and right hemispheres of the brain through processing tasks of kindergarten students with three different instructional approaches: Montessori, Open Activity-Centered, and Traditional-Conventional. Though there was no statistically significant difference among the instructional approaches, females in all three approaches consistently scored higher on left-brain tasks than males did. Males from all three approaches consistently scored higher on right-brain tasks. The only significant difference was found in the Montessori class; experimental groups from the Open Activity-Centered and Traditional-Conventional approaches scored consistently higher on right-brain tasks than control groups did from the Montessori classes. These results suggest the differences are due more to the influences of the Montessori environment rather than gender.

Music greatly assists making sense of patterns when the development of right-brain activities, such as creativity, artistic expression, and musical intelligence, begins and heightens around age four. This process proves essential to developing life-long thinking skills that lead to enhanced natural development of communication, expression, and cognition (Weinberger, 1998a). More recent research (Finnerty, 1999) suggests that locating the area of musical knowledge in the brain is just not that simple because it is not localized in one specific region. The fact that music experiences are multimodal—involving auditory, visual, memory, emotion, and motor skills—suggests that musical processing uses many areas of the brain. The power of music helps the brain develop, integrates the two hemispheres, and plays a crucial role in the neurological development of the child.

Communication and Language

All cultures have always used music for celebrations and traditions. Music and sound communicate from the very beginning of life. A baby's first cry is a means of communication. Research evidence on music and the baby's brain is very limited; there is still so much to be learned. Thus it is wise to keep an open mind regarding external influences on brain development until neuromusical researchers provide a clearer picture of the child's musical brain development. This should not discount, however, that research has shown that infants in cultures all over the world have innate musical behaviors, and they use music as meaningful communication in their earliest years of development (Weinberger, 1999). Through movement, the very young child will chant a nursery rhyme with a lilt in his voice and an instinctive grouping of words into rhythmic pulses of varying lengths. Rhythm can be felt in virtually all of life experiences, from breathing to walking, and is most naturally expressed in speech.

Edwin Gordon (2003) compares learning music to learning language and stresses the importance of early exposure to both. Consider the infant's first lessons in language. From birth, if not earlier, children are exposed to the sounds of spoken language surrounding them, which they internalize without apprehension. Over time, usually in about nine months, children have the ability to imitate and articulate these sounds of their culture. With much reinforcement, response, and interaction from a caregiver, children slowly learn to transform their sounds into spoken language. It is these words and sentences that children later learn to read and write and eventually perfect through school education.

Gordon (2003) states that this process of development contains four stages—listening, speaking, reading, and writing—that begin at birth and end just after kindergarten. If children do not proceed through these developmental stages, they will not be prepared to benefit from formal language instruction. The same is true of music learning. It is essential that children are sung to as frequently as they are spoken to, and in order for them to absorb the varied sounds of music, they need to hear music frequently. Gordon argues that children who have not developed musical listening, singing, and vocabulary chanting skills later have difficulty relating to and understanding the music of their culture. The first eighteen months are crucial to providing children with the necessary preparation for further music learning. Failure to expose children to music early in life puts them at a disadvantage for later participation in the “making” of music, relegating them to just learning “about” music.

At the approximate age of three years, children begin to achieve lateralization of brain function, which becomes evident as a dominant hand for writing or throwing or a dominant foot for kicking. Experts consider this lateralization to be essential for language development and developing skills for processing information (Galliford, 2006).

The brain's ability to process various forms of information allows the child to communicate. Communication relies on the interaction of the whole brain, and research suggests that speech stimulation is processed in the left hemisphere (Kandel, Schwartz, & Jessell, 2000), while music is processed in the right hemisphere (Rauscher & Zupan, 2000; Rauscher, et al., 1997). Since vocal inflection, speech rhythm, and melodic intonation are processed in the right hemisphere, perhaps this aspect of communication has a stronger connection with music. Evidence shows clearly that the early years are a period when children are biologically predisposed to learning, and consistent external stimulation is necessary throughout this critical period of brain development (Golden, 1994).

Babies are born with brain-mapping capabilities for sound recognition (Kuhl, 2000) and the capacity to learn and articulate the smallest units of language that are known as “phonemes” (Adams, 1990). Children learn the mother tongue by continuous practice recreating phonemes and by hearing and imitating, in the form of language babble, speech, and song modeled by caregivers (Papousek & Papousek, 1981). Although the clarity of speech modeled by the caregiver influences an infant's pattern of articulation (Liu, Kuhl, & Tsao, 2003), neglect or limited practice of verbal interactions can delay language development. This also applies to singing and the child's ability to imitate and match pitch. The nuances that children express in speech and song become evident long before they learn phonics and spelling (Papousek, 1994).

Gromko (2005) explored the relationship between music training and phonemic awareness in young children. The results of the study showed that young children who received four months of music instruction performed significantly better on a test of phoneme-segmentation fluency when compared to the control group. She discovered that those children who sang folk songs accompanied by body percussion and movement to beat, text rhythm, and phrasing were more skilled in hearing a word and responding with its component sounds (phonemes).

Gordon (1997) suggests that just as children learn the foundation of language at home before starting school, they should also learn the foundation of music listening and singing vocabularies. From birth the young child is immersed in the sounds of language and perfects these language skills over time. Reading to the young child with clear enunciation provides opportunities for aural comprehension and exploration of sounds heard. The child begins to speak with babble and through practice and reinforcement eventually forms words and word patterns that lead to sentences. At this very young age, do not expect the child to read and write; just let her explore and learn.

This model of learning language applies to the development of music literacy. Just as children develop an ear for the language surrounding them, they develop an ear for expressive singing and eventually respond musically to what they hear and feel when they are sung to (Feierabend, 1997). Gordon (1997) parallels the stages of music development to the stages of language development that move from experimentation with sound to its imitation and then to its assimilation. At the final stage of music development, the child begins to coordinate singing with breathing and movement, tonal and rhythm skills become accurate, and a sense of beat and a tonal center become present.

Galliford (2006) studied 307 children between the ages of 3 and 5 years to measure whether exposure to varying durations of music and diverse qualities of musical instruction exhibited differences in the development of linguistic and nonlinguistic skills. Galliford assessed the following variables to determine their relative influence on both linguistic and nonlinguistic development: gender, quantity of musical exposure in the first three years of life through either home or school environments, and socioeconomic status of the parents of the participants.

Results indicated that there was a significant association between the total quantity of musical exposure experienced by each participant and the development of linguistic and nonlinguistic skills. Overall, the analysis of the results disclosed the absence of gender differences, and the influence of music on linguistic and nonlinguistic development was independent of socioeconomic status. These latter results are significant due to previous studies indicating a strong correlation between socioeconomic status and educational success (Burt, Holm, & Dodd, 1999; Boudreau & Hedberg 1999) and decreased lan-

guage abilities in children from lower socioeconomic backgrounds. Another significant correlation was found between the quantity of music exposure and test outcome, indicating that regardless of socioeconomic status, children demonstrated higher linguistic and nonlinguistic abilities based on the consistency and quantity of music exposure.

This study supports earlier research indicating that music stimuli during the formative years of the brain development positively affect the development of cognitive-related abilities (Rauscher & Zupan, 2000; Persellin, 2000). It also supports the unexpected finding that music positively influences the development of linguistic skills in young children.

Roehmann & Wilson (1988) found that Jean Houston of the Foundation for Mind Research believes that children without access to an arts program are actually damaging their brain. They are not being engaged to nonverbal modalities that help them learn skills like reading, writing, and mathematics.

The primary difference between speech and music is the velocity of frequency changes in milliseconds, in which music is slower than speech (Galliford, 2006). The characteristics of music, such as frequency, intensity of rhythm, cadences, and chord progression, compel Galliford to raise the question, "What is the connection between the ear and the brain?" Additional research, however, is needed.

Motor Skills and Movement

Sucking is one of the first mobile acts of an infant, followed by the startled response of arms and legs flung outward from the body. Movement is a survival skill for humans and develops early without instruction or mimicry (for example, blind children learn to walk without being taught). On the other hand, highly specialized and coordinated movement patterns, such as violin playing or tap dancing must be taught and mastered. Outer spatial perception and a high level of rapid spatial processing is needed for ball sports, whereas gymnastics, ballet, swimming, and skating require the opposite and rely upon joint and muscle communication. Children master these skills more readily if instruction begins at an early age (Levine, 2002).

The five forms of motor function are gross motor function, fine motor function, graphomotor function, musical motor function, and oromotor function. Gross motor function uses the large muscle groups necessary for riding a bicycle or playing soccer while the fine motor function controls hand-eye coordination in which visual pathways and fingers coordinate closely, such as using scissors or painting. A graphic artist uses fine motor functions, but the highly specialized graphomotor function is used in writing. Cursive writing, for example, involves the mastery of an unending flow of lengthy visual sequences. Similar to graphomotor function, the oromotor function involves rapid motor sequencing to chew food and to execute all oral communications, from speech to singing (Levine, 2002).

Quite often, the children who have difficulty with speech in preschool also have trouble with writing in the early grades in school. Successful mastering of motor skills boosts a child's self-esteem and provides opportunities to participate in recreational activities in the early school years. Musical motor function uses a wide range of muscular responses while playing musical instruments, dancing, or singing. Exploring musical options to improve motor skills comes in the form of dancing and marching for the development of gross motor functions; playing piano and guitar demands rapid motor sequencing abilities, playing trombone stresses the use of large limb muscles, and playing flute demands more fine motor functions. Without doubt, mastering any of the above highly attuned musical motor functions can do much to bolster the self-esteem of children.

Many school-aged children have difficulty walking to a steady beat and performing simple gross motor skills (Weikart, 1987). These fundamental motor patterns are evident before the age of five and merely stabilized beyond that age (Gilbert, 1979). Hargreaves (1994) suggested that learning occurs through movement and quick emotional associations until a major leap in brain growth takes place in the elementary years. This finding further supports the notion that young children inherently express themselves through music and movement and tactile kinesthetic experiences. Takahashi, director of the Suzuki Talent Education Institute in Matsumoto, Japan, believes that music must be experienced first through awareness of the body, then expressed in the whole body through controlled body movements, and then sung, before being played on any instrument.

Social Skills

Some of childhood's social challenges are (a) seeking friendship, which can be perceived as long-term security against loneliness and self-doubt, or (b) seeking popularity, which consists more of having a positive reputation among a larger group of

peers. All of us have been on the receiving end, or witnessed the cruel and thoughtless actions of children toward another. Unfortunately, some children are less skilled than others at succeeding in these areas. The desire or desperation to fit in socially creates many social conflicts and heavily preoccupies the young child. While a substantial amount of social ability is inborn, some can learn to handle the stress better than others (Levine, 2002).

Musical play has many benefits. Children have a natural desire to play and sing, with enjoyment as the only goal. It is a long-held belief that play facilitates growth associated positively with learning and development. The psychologist Brian Sutton-Smith (1997) suggests that additional characteristics of play are that it is variable, it is initiated by the child, participation is voluntary, and rules are set by the players while having fun. Play is improvisational by nature, and completely engages the child. Play also serves as a form of social interaction; social skills, rules, and turn-taking are all learned and practiced through interactive play, while play reinforces expected cultural behaviors (Blacking, 1995). Typically interactive play between an adult and an infant consists of vocalized pitch and volume with varying rhythm that simulates playful exchanges coordinated between the two. These are crucial to the development of close relationships and music has these same characteristics (Trevarthen & Malloch, 2002).

In addition to parallels between music and play, Campbell (1998) discovered that children used music in many ways. Music assists children in forming an identity and maintaining emotional stability and is self-initiated. The creative process is also at work in children's play, as seen in transformed repeated ideas—taking a concept or idea and transforming and repeating it in another area of learning, like the ability to repeat patterns in music and transforming that pattern repetition into language—such as jumping rope and improvising on the initial concept, all of which is quite spontaneous and carried out in the search for novelty (Young, 2003). Whitwell (1997) contends that creative participation in music improves self-image and self-awareness and creates positive attitudes about oneself. This finding is important because “positive” experiences are associated with the development of knowledge, skills, and concepts (Cobb, Yackel, & Wood, 1992).

Concentration

Does baroque music improve concentration? Stein, Hardy, and Totten (1982) studied the effect of music and movement on memorization and retention skills. In the experimental group, students were asked to remember twenty-five words while listening to Handel's *Water Music*. The results of the study showed that those who listened to Handel's music while memorizing scored higher than those who memorized in silence. Further influencing the study was the brain's use of both its right and left hemispheres. George Lozanov's studies on music and memory led to what is known as the Schumann resonance. This refers to the electromagnetic frequency of the brain when it registers 7.5 cycles per second, or the range of meditative thought (Ostrandra & Schroeder, 1979). Ostrandra and Schroeder believed that slowing down the heartbeat and relaxing the body aided concentration and memorization skills. Lozanov (as cited in Ostrandra & Schroeder, 1979) believed that music assisted the body in relaxing while the mind remained alert. His research showed that music of a beat most similar to baroque music had the ability to synchronize the rhythms of the body—heart and brain waves—to the beat of the music. A ten-year longitudinal study conducted by Dr. Norio Owaki (cited in Ostrandra & Schroeder, 1979) showed that music and sound could change brain wave activity.

Music Therapy

Research suggests that music therapy is beneficial in teaching both social and academic skills to young children. Music therapists often work with preschool children and children with Attention Deficit Hyperactivity Disorder (ADHD). Jackson (2003) conducted a survey to ascertain the music therapy methods used for children with an ADHD diagnosis, how effective the music therapist perceived this treatment to be, and the role that music therapy treatment played in relation to other forms of treatment. The results of the survey indicated that music therapists often use a number of music therapy methods that include role-turn playing with percussion instruments, leading rhythmic compositions, and movement to music to treat children with ADHD.

Register (2004) examined the effects of a music therapy program on teaching reading skills and also compared on- and off-task behavior of students during video versus live music conditions. This study confirmed that music increased the on-task behavior of students and supported the need for further investigation regarding the benefits of enrichment programs, particularly programs that incorporated music activities.

Higher-Level Thinking

Higher-level thinking is activated when children encounter challenges with solutions or meanings that are not immediately obvious. There are five areas of higher-level thinking: thinking with concepts, problem solving, critical thinking, thinking with rules, and creative thought. Children deficient in any of these areas will resort to memorizing by rote or imitation and may not be able to engage in in-depth learning (Levine, 2002). Each area of higher-level thinking is highly specialized, and strengths and weaknesses in either area can differ widely from one child to another. Children who can memorize facts extremely well and carry out most procedures by rote, but cannot generalize or use what they learn, have mastered basic skills but not the higher plane of thinking. Fertile higher thinking for all students is the parent and educator's goal and should be nourished from an early age. Each and every one of us thinks in a different way, and these higher-level thinking skills become crucial as children progress through school.

Rauscher et al. (1997) explored the link between music and intelligence in a two-year study with preschoolers. They reported that music training—specifically piano instruction—was far superior to computer instruction on how to use a computer for dramatically enhancing the abstract reasoning skills necessary for learning mathematics and science. Rauscher and Shaw (1998) set out to compare the effects of musical and nonmusical training on intellectual development. The experiment involved seventy-eight three- to four-year-old children of normal intelligence from three preschools in Southern California. Thirty-four of these children received private piano lessons, twenty received private computer instruction, ten received singing lessons, and fourteen in a control group received no special lessons. None had prior music lessons or computer training. Those children who received piano/keyboard training performed 34 percent higher on tests measuring spatial-temporal ability than the others. What Rauscher and Shaw emphasized was the causal relationship between early music training and the development of the neural circuitry that governs spatial intelligence.

Rauscher colleagues (1997) found a connection to the brain linking musical and spatial skills while studying higher brain function. Children who took music lessons scored up to 35 percent higher on spatial tasks, and music lessons improved the spatial-temporal reasoning abilities of four- to six-year-olds. Perhaps listening to specific music enhances spatial-temporal reasoning.

Music students also outperformed nonmusic students on achievement tests in reading and mathematics in a study of medical school applicants. Sixty-six percent of music students who applied to medical school were admitted, the highest percentage of all groups. Students who studied music also scored higher on both the verbal and mathematics portions of the SAT than nonmusic students (Mickela, 1990).

Further research suggested that music should assume a place in the regular school curriculum as it positively affected academic achievement. "Music and the arts were vital to the development and expanse of the human intellect, which in turn resulted in superior academic and career performance" (Oddleifson as cited in Kelstrom, 1998).

A child may use the ability for logical thinking that she developed in music class to solve problems quite unrelated to music. Music profoundly influences the academic life of a child and deserves equal status within the curriculum (Sloboda, 2001). These studies present a compelling argument in favor of the implementation of long-term developmental music programs for all students, not just those students with an obvious aptitude and interest.

The well-known Mozart effect study, which was conducted by Rauscher, Shaw, and Ky (1995), found that students performed better on spatial tasks from the Stanford-Binet Intelligence Test after listening to ten minutes of Mozart's Sonata for Two Pianos in D major. It should be noted a similar study was conducted by Morton, Kershner, and Siegel (1990) from the University of Windsor, Canada, replacing Mozart's sonata with the music of Pink Floyd, and the study produced similar results. Also, several attempts by other researchers to replicate the Mozart effect under similar conditions were not successful (Carstens, Huskins, & Hounshell, 1995). However, what is of interest, with media attention at a height, country-music fan and Governor Zell Miller asked the legislature to spend \$105,000 to pay for CDs for distribution to all newborns in the state of Georgia (Kirchner, 1998). It was his intent to expose the newborns to soothing classical music in the hope of boosting brain power. While there is no doubt that listening to classical music was not a negative experience to the newborns, it certainly raises the need for caution and the understanding that research is rarely conclusive.

Reading

The ability to read begins with phonemic awareness and auditory processing, which is the ability to perceive and respond to sound (O'Herron & Siebenaler, 2006). Early in life the young child's brain is wired for imitation and patterning, and the

child systematically learns to discriminate between like and unlike pitches, rhythms, and phonemes while developing a sensitivity to the smallest units of sound in language. Listening is the ability to filter, analyze, and respond to sounds (Jensen, 2001), and auditory perception relates both to learning music and learning language. However, not all auditory discrimination skills have equal value when learning to read. Lamb and Gregory (1993) assessed four- and five-year-olds' ability to (a) isolate and manipulate phonemes in words, (b) read, and (c) recognize musical sounds. Students with high phonic awareness scored higher in reading ability as well as pitch discrimination, which is important for recognizing the different qualities of sounds. Music, though, is perceived as patterns, similar to phrases in speech. Technically a musical note is defined as frequency and duration within a musical phrase, somewhat comparable to a phoneme within a word (Sloboda, 1985). Some aspects of sound patterning are shared between the language and musical domains of the brain (Gruhn, Altenmuller, & Babler, 1997; Patel, 1998).

The National Reading Panel (NRP), a research review group, recommends the development of phonemic awareness and prosody (the ability to assemble words into natural speech rhythm with intonation, inflection, and flow) because they are critical prerequisites for learning to read. Educators use music instruction to enhance academic achievement and mental discipline (Upitis & Smithrim, 2001), and evidence suggests that focused listening to music helps some children learn to read, probably by increasing children's awareness of speech sounds, important in "sounding out" words (Butzlaff, 2000). Music, specifically song, constitutes one of the best ways for babies to learn to recognize the tones that add up to spoken language.

The study "Project Zero," conducted by a research group at Harvard University since 1967, reports that while very young children can reproduce specific pitches with considerable accuracy, intervals, and melodic fragments develop much later. By age three, children appear to have a sense of the rhythmic structure of songs and can reproduce fragments of songs. By four years of age, they attempt to reproduce whole songs, although usually without stability of key or tonality, and only at five or six years of age are specific intervals sung correctly (Gardner, 1973). Research by Schlaug (1999) suggests that all children should begin music instruction before they turn seven to obtain optimal brain development.

A study by Hurwitz, Wolff, Bortnick, and Kokas (1975) asked whether music training improved reading performance in first-grade children. The experimental group received Kodály training which used folk songs and emphasized melodic and rhythmic elements. The control group—consisting of children matched in age, IQ, and socioeconomic status at the beginning of the study—received no special treatment. The music instruction was extensive—five days a week for forty minutes each day, for seven months. Students were tested on reading ability at the start of the school year and retested at the end of the year. After training, the music group exhibited significantly higher reading scores than the control group. Music training continued and after an additional year of Kodály training, the experimental group still performed better than the control group. A reading program in New York dramatically improved reading achievement scores by including music and art in the curriculum (New York City Board of Education, 1980). These findings support the view that music education assists in developing the ability to read.

Mathematics

Mickela (1990) conducted a study of 500,000 students in forty-five countries showing that the United States was below average in mathematics. This is significant because a grasp of proportional mathematics and fractions is a prerequisite to mathematics at higher levels, and children who do not master these areas of mathematics cannot understand more advanced mathematical concepts that are critical to higher-order thinking.

I (Harris, 2005a) conducted research studying the differences in mathematics scores between students who received traditional Montessori instruction and students who received music-enriched Montessori instruction. A sample of 200 Montessori students aged three- to five-years-old were selected and randomly placed in one of two groups. The experimental group received a treatment consisting of three half-hour sessions per week in music instruction for six consecutive months. The experimental treatment was an "in-house" music-enriched Montessori program and was sequenced in order to teach concepts relating to pitch, dynamics, duration, timbre, and form as well as skills in moving, playing, listening, singing, and organizing sound. The comparison control group received traditional Montessori instruction based on a three-year program that concentrated on the practical life, and the sensorial, language, mathematical, and cultural (including music) areas of development and did not include a specific music curriculum. The Test of Early Mathematics Ability-3 was used to determine if music instruction had affected students' mathematics test scores. The test covered (a) concepts of relative magnitude, (b) counting skills, (c) calculation skills, (d) knowledge of conventions, and (e) number facts. Results showed that subjects who received music-enriched Montessori instruction had significantly higher mathematics scores.

Rauscher and Shaw (1998) emphasize a causal relationship between early music training and the development of the neural circuitry that governs spatial intelligence. Their studies indicate that music training generates the neural connections used for abstract reasoning, including those necessary for understanding mathematical concepts. Their 1997 study exploring the link between music and intelligence reported that music training, specifically piano instruction, was far superior to computer instruction in dramatically enhancing children's abstract reasoning skills necessary for learning mathematics and science.

Early childhood music provides contexts where creative, conceptual, and logical thinking combine, presenting windows of opportunity for the development and reinforcement of mathematical concepts (Kalmar, 1989). A New York City program called LEAP (Learning through an Expanded Arts Program) uses art and music to teach academic skills. Simple mathematical concepts, such as odd and even, counting, addition, multiplication, sets, and fractions are integrated throughout the musically enriched lessons (Dean & Gross, 1992). As students developed the rhythms for their songs, they began to think in multiples of four. They realized that if they had sixteen beats of music, they had four sets of four beats. Students also grasped the concept of odd and even when the groups were subdivided into smaller units for particular steps or musical rounds (Dean, 1992).

Similar brain processes function to develop a strong sense of musical pitch and the understanding and use of numbers. Pitches in a musical scale and numbers increase from step to step and from lower to higher. The representations, though different, require a similar way of understanding and using information (Gardiner, Fox, Knowles, & Jeffrey, 1996). Music can teach and reinforce basic mathematical concepts otherwise difficult to grasp for some students (Geoghegan & Mitchelmore, 1996).

Mathematics and music were noted for their crossover talents for more than just coincidence. For example, the musical scale is similar to a neat logarithmic progression of frequencies and patterns of notes and patterns of numbers that share similar connections. Music involves ratios, regularity, and patterns, all of which parallel mathematical concepts. Though music is viewed as a separate type of intelligence, high performance in math and music have a significant correlation. Reading music requires an understanding of ratios and proportions. Arithmetic progressions in music correspond to geometric progressions in mathematics; that is, the relation between the two was logarithmic (Marsh, 1999).

Case studies have assessed the academic success of school music students (Milley, Buchen, Oderlund, & Mortatotti, 1983). Rhythm students learned the concept of fractions more easily, and those students who learned rhythm notation scored 100 percent higher on fractions tests. The sixty-seven individual case studies showed that students' achievement in mathematics improved when arts were included in the curriculum. Mickela (as cited in Kelstrom, 1998) also believed that studying music enabled students to learn multiplication tables and mathematics formulas more easily. These findings indicated that music uniquely enhanced higher brain functions required for mathematics, chess, science, and engineering. Because neural connections were responsible for all types of intelligence, a child's brain developed to its full potential only with exposure to the necessary enriching experiences in early childhood (Hargreaves & Davis, 2000).

Creativity

Research predicts early childhood musical experiences and early childhood mathematical experiences can reflect conjoint dimensions (Geoghegan & Mitchelmore, 1996). Learning Through the Arts (LTTA) was initiated in 1994 by the Royal Conservatory of Music, Toronto, Canada, and focuses on teaching core academics through arts-based activities that engage the child (Catterall, 1998). Engagement means that children are wholly involved, physically, emotionally, intellectually, and socially, as Hoffman (2003) describes a science class using LTTA:

The class is gathered at one end of the gym. Half the kids are walking around in a tight little clump in time to a deliberate beat. . . . Suddenly [the teacher] picks up the pace and the kids follow suit. . . . The marchers speed up and begin to spread out. Turns out this lesson is about energy transfer: The students are water molecules being heated up by a uranium bundle in a nuclear power plant. (When water is heated, each molecule moves more quickly and further apart from the others, hence the change in movement signaled by [the] drum).

Later in the lesson the kids shuffle along the floor, representing electrons moving along power lines. Then they pretend to be atoms joining together and breaking apart, and chant a rap about the pros and cons of various energy sources—all of this to musical accompaniment. (pp. 2–3)

Interviews and surveys with students, parents, teachers, artists, and principals from LTTA schools all indicated that the arts seem to engage children in learning (Upitis, Smithrim, Patteson, & Meban, 2001). Artsvision (an American company

developing innovative education projects) recommended the arts as a means of engaging the student and teaching across the curriculum.

Summary

Research supports the theory that music has a positive effect on the development of the brain. Exposing the young child to music earlier in life allows this effect to take place sooner. Musical study at an early age is linked to enlargement later in life in specific areas of the brain that change in response to a stimulus (Campbell, 1997).

This exposure to music must begin early in life, and research suggests that the first eighteen months are crucial to prepare children for further music learning. Failure to expose children to music during these early times deprives them of the optimal time for learning and development (Burton, Horowitz, & Abeles, 1999).

The power of music stretches far beyond its interchange with language, math, and reading. Music uniquely enhances higher brain functions. Music is the soul of creativity, promoting individuality, improved self-esteem, and social skills. Music is the language of feelings with the power to communicate profound emotions. Music is what makes us unique as human beings.

CHAPTER 2

Biology and Music—Tapping the Global Rhythm

Music is indeed universal—it exists in every culture. However, is it a cultural characteristic or a biological/evolutionary development? Do we all beat to a common evolutionary drum? And could music be the universal language—linking minds across cultures and ancestral time? One only needs to walk along the seashore or through a park and listen to the sounds of the environment. Bird and animal sounds fill the air and catch our attention, stimulating us to take action or providing us with comfort. These sounds are similar to sounds humans make, which allow us to identify each other and have many different vocal qualities.

Music, like language, is universal, it occurs in every human culture that we know of and it goes far back into human history. Music may be one of the most ancient and universal forms of human communication. Song is one of the most prominent features in culture, and the human voice has often been identified as the most ancient instrument used in music. Also, the apparent universality of music supports the biological origin of music because behaviors that are closely linked to biology have universality as one of their criteria. It appears that singing developed during evolution and some song structures show similarities to territorial calls, suggesting that singing evolved from loud calls used in a territorial or alarm context. This would then dictate that a similar process took place in the evolution of human singing, and that singing and ultimately music evolved from loud calls of early hominids (Weinberger, 1998b).

“Music is in our genes,” says Mark Jude Tramo (2001), a musician, songwriter, and neuroscientist at the Harvard Medical School. “Many researchers are trying to understand melody, harmony, rhythm, and the feelings they produce, at the level of individual brain cells. At this level, there may be a universal set of rules that governs how a limited number of sounds can be combined in an infinite number of ways” (p. 54).

Archaeologists discovered flutes that were made from animal bones by Neanderthals living in Eastern Europe more than 50,000 years ago. Any adaptive behavior in existence for such lengths of time certainly fills the criterion to be a product of evolution. However, there is controversy over this bone flute that was found in Slovenia. One theory is that it is in fact a remnant of a flute, while an opposing theory believes that the bone is simply a gnawed bone, that the holes are coincidentally round and shaped in the proper distance for a flute. The importance of this bone flute is immense since it was found in a Neanderthal dig site and Neanderthals were thought to not have had language because of the shape of their jaws. Naturally, if this is in fact a bone flute, then that would indicate that even if they didn’t have language, they had music. Tramo (2001), however, believes that music and dancing preceded language, and no human culture is known that does not have music.

The most likely function of early music was to display and possibly reinforce the unity of a social group toward other groups. In today’s world, whenever groups of people define themselves by their music—either by politics, religion, age, ritual, celebration, or function—it is usually through spiritual music, ceremonial music, military music, dance, or sports songs. The origin of social group cohesion may go back to the very beginning of human evolution.

Music has the power to evoke emotion, to express emotion, to make people feel. Some theories suggest that music can have an impact on levels of certain hormones. When music promotes pleasure, it causes the release of endorphins similar to the high long-distance runners experience after running for extended periods of time. Studies show that music causes a biochemical expression such as lowered testosterone levels while listening to favorite music, thus diminishing the heightened testosterone levels necessary for fighting (Lemonick, 2000). Music, it would seem, has the ability to either arouse, when following the rhythmic beat of a call to fight, or soothe and relax the mind and body.

Additional evidence also shows that music does not exist simply for our enjoyment, but rather it affects us in many ways. Some hospitals play soft background music in intensive care units for premature babies. Researchers have found that

such music, as well as a nurse's or mother's humming, helps babies gain weight faster and leave the unit earlier than premature babies who don't hear these sounds. On the other end of the age scale, music has been used to calm Alzheimer's patients. At mealtime in nursing homes or hospitals, people suffering from Alzheimer's may be difficult to manage, and fights can occur. It has been demonstrated that the right kind of music reduces confusion and disagreements. Does music lie at the heart—and brain—of what it means to be human? It would seem that everyone is affected by music—the young and old alike.

Music plays a role in social bonding, such as between mothers and their infants, and courting behaviors, such as humans' fascination with love songs that simulate the singing used by birds and chimpanzees to attract mates. As discussed in chapter 1 on brain development, there is evidence that babies can hear music inside their mother's womb. Very young children display musical behaviors and capabilities long before cultural influences begin to shape them (Trehub, 2006). Research on children has shown that they imitate musical phrases and songs and have the ability to compose and perform their own fairly complex songs. These young children have the capabilities of appreciating music and expressing themselves musically (Trehub, 2000).

Of great interest today is the study of cross-cultural recognition of emotion in verbal language and music. Balkwill, Thompson, and Matsunaga (2004) from Queen's University, Canada, conducted a very interesting experiment about the recognition of emotion in Japanese, north Indian, and western music by Japanese listeners. The study randomly assigned the Japanese participants to a music set and these music sets consisted of either Canadian improvised music, Japanese traditional music, or Hindustani ragas music. The objective was for the Japanese participants to rate the style of music assigned to them on scales from "not at all joyful," to "joyful," to "very joyful"; "not at all sad," to "very sad," and so on. The responses were analyzed to assess whether the music that was intended to evoke a specific emotion was recognized as expressing that emotion. The results confirmed that the pieces that were intended to express anger were given the highest ratings on the anger scale, and that was the case for the Canadian, Japanese, and Hindustani music. In general the researcher discovered that for each of the three emotions—anger, joy, and sadness—anger was found to be melodically complex with loud sounds, joy was melodically simple with faster tempos, and sadness was melodically complex with a slow tempo. However, as expected, there was some overlapping, since some of the pieces that were intended to be angry also scored high on the joy scale. Perhaps this is because they share many of the same acoustic cues, such as up-tempo and boisterousness, but differ in terms of complexity. Balkwill and colleagues' research suggests that music is indeed the language of emotion.

As an art form or cultural artefact, music is famous for its emotional power and its ability to affect our mood. Is there any neuroscientific explanation for that? Further neuro-imaging research from Montreal, Canada, supports the fact that music has the ability to alter mood. The researchers took advantage of the fact that some people get chills or shivers down the spine when listening to particular pieces of music. Using only instrumental music to eliminate verbal associations with the text of a song, subjects listened to music as their brains were scanned. The results suggested that they did indeed have chills and shivers as demonstrated by changes in their heart rate. Then the researchers scanned the subjects' brains to monitor brain activity and found some very deep and evolutionarily ancient reward centers of the brain being activated by this purely instrumental music. These areas of the brain are quite significant. They are the areas that are typically activated by biologically significant behavior such as eating or reproducing, and yet they were being activated by this abstract acoustic stimulus with no obvious survival value. The evidence suggests that music has access to some of the most ancient brain structures, tapping into the deepest parts of the brain (Patel, 2003a).

What seems clear is that the building blocks of music are specialized and processed in different parts of the brain, which brings us to one of the big questions in neuroscience today: how does brain circuitry give rise to the mental experiences that we have of the world? Lemonick (2000) assessed children with brain damage who exhibited impairments of certain aspects of music, such as the discrimination of rhythm, while other musical aspects remained intact, such as the discrimination of melody. The study presented science with an opportunity to study the relationship between brain function and complex cognition. Some brain circuits respond specifically to music while also participating in other forms of sound processing. For example, the region of the brain responsible for pitch perception is also involved in determining perfect pitch. Further studies of people with damage to either hemisphere of the brain revealed that stimulation of both sides of the brain resulted in the emergence of music perception.

Why do we feel compelled to move to the beat of music? And why is it that humans are the only species that spontaneously move in response to music? Perhaps the answer lies in the interplay between two brain systems—the auditory system (hearing) and the motor system (movement production) system. Researchers have found activity in brain regions that control movement even when people just listen to music without moving any part of their bodies. Tramo (2001) suggested that just thinking about tapping out a rhythm lights up parts of the motor system in the brain.

The Universal Language—Music?

Music is known as the universal communicator. Whether we understand the language being spoken, music has the ability to cross all cultures, times, and generations and express feeling understood by all. Patel (2003b) of the Neurosciences Institute in San Diego conducted a fascinating study with English and Japanese speakers into how the mother tongue influences the musical ear, and how we group sounds together into larger rhythmic units. Patel explains that when short and simple non-linguistic tone sequences with minimal structures—for example, alternating long and short tones—are played, they are perceived as a repeating segment or a group of some kind. What Patel discovered is that speakers of different languages can hear exactly the same acoustic sequence in very different ways. The evidence suggests that the reason for this was not some inborn difference between Americans and Japanese as listeners, but because particular patterns are reflective of the native language spoken by the two cultures (Patel, 2003b).

Patel believes that music and speech should be regarded as two ends of a “communicative continuum,” and not described simply as speech stops here and music begins here. In many cultures, the vocabulary does not include a word for music because music is such an integral part of what it means to be human. However, how important is cultural knowledge for the young child in understanding and finding meaning in music? There appear to be many schools of thought on this topic and no doubt further research is required.

The ethno-musicologists believe that if you were not completely immersed in a culture, or if you didn’t grow up in that culture, then you could not appreciate the nuances of the music, and you could not fully grasp the emotional meaning. Catherine Falk (2004), Professor and Dean of the Faculty of Music at the University of Melbourne, suggests that music is utterly entwined with notions of memory, emotion, identity, relationship with place and time, relationship with other human beings, relationship with all living and inanimate objects, relations with the heavens and the gods, and individuals’ ways of interpreting their worlds or their cosmologies in their own particular, very culturally specific ways. Mitchell (2007) suggests that people construct the syntax of music in a manner similar to the way they construct themselves socially in their own culturally specific ways. Falk (2004) believes that music is a unique way of knowing the world that has the potential to extend into other ways of knowing the world: visual, linguistic, phonetic, psychological, and mathematical. However, she cautions against misinterpretation and assuming incorrect meanings of music outside the domain of cultural knowledge to people.

However, Patel’s (2003b) research study indicates that this is not necessarily the case. The evidence suggests that music can transcend cultural boundaries in order to communicate powerful emotions, and coming from two different worlds or vastly different cultures does not necessarily impact the results. It seems as though music that is intended to communicate emotion, does so universally, and every culture on the planet has a form of communication that could be referred to as musical.

From a psychological perspective, it would seem that music is a universal language since it is relatively easy to blend musics of all cultures (Mitchell, 2007). A group of musicians from different cultures all over the world, who cannot communicate through language, can quite simply pick up from where one leaves off, they can blend, they can intertwine, they can improvise, and they can communicate through music. Music has the unique ability to communicate across cultures.

From the neuroscience perspective, Patel is quite confident that music is a human universal; however, he believes that calling it a language is problematic because it is different from language in so many important ways. We should think of music as a communication system that has deep and important connections to language and that exploring those connections can teach us a lot about music, about language and about the brain itself.

Spirituality and Music

“Music and song were intimate parts of the rites and ceremonies in which the meaning of group life was consummated” (Dewey, 1980, p. 7).

Throughout the history of civilization music has been an integral part of life with a special place in spiritual and religious celebrations. Music making is connected to the earth and the humans who inhabit it. Musical instruments of varying types, tone colors associated with the timbre of the human voice, and the worldly acoustics in which these sounds are made (such as the echo of a cave), all remind us of our spiritual connection with nature. Children are especially receptive and sensitive both to the wonders of musical exploration through handmade instruments from natural materials and to the possibility of creating music and sound with one’s own body. The incredible vocal range of a baby’s voice encourages endless improvised musical conversations with the environment.

Even with the youngest of children, exploring the musical spiritual dimension is more easily experienced through movement and dance, because children will flow with the music the more their feelings are engaged. Insofar as the physical component of the musical experience is vital for the child, so too is the aural experience. For many, the exploration of musical instruments made from natural materials is a holistic experience. The reverence associated with the tree from which the wooden musical instrument was carved is reestablished each time the instrument is played (Fisher, 2002). Setting the scene for free-flowing imaginative creativity can contribute to the spiritual dimension of the experience. The many therapeutic possibilities of music offer such powerful experiences that they may be described as divine. Experiencing this spiritual dimension can be accomplished through various music-making activities and the right balance between what is experienced and those who experience it. This spiritual awakening within the musical experience is often linked to cultural areas such as ethics, identity, personal and social development, particular cultural traditions, and the feeling of being connected to something beyond and outside oneself (Boyce-Tillman, 2007).

Life without Music

What if life did not include music? Imagine a day in the life of a twenty-first-century child without any music. Waking up in the morning is not induced by an alarm clock or birds whistling, and the morning shower takes place in silence. Once arriving at school the national anthem isn't sung, and the sports games throughout the day are absent any form of music or chanting. School musicals no longer exist and those budding figure skaters and dancers are moving to some inner rhythm desperately in need of a steady beat. Evenings are no longer filled with teenagers listening to the latest music either on their TVs or MP3 players, and the baby is not sung to sleep by a parent. Celebrations around the world are devoid of music, and the father of the bride does not offer his hand to her for the first dance of the evening. Memories of days past are no longer triggered by a familiar musical tune and the universal sounds of planets in motion are gone.

Research by Roehmann and Wilson (1988) supports the theory that music has a positive effect on the development of the brain, and the earlier in life the young child is exposed to music, the sooner this effect begins to take place. Jean Houston (as cited in Roehmann & Wilson) of the Foundation for Mind Research agrees and suggests that children without access to music are actually damaging their brain. They are not being engaged in nonverbal modalities that help them learn skills like reading, writing, and mathematics.

We do not need research to show us that music plays a big part in everyone's life. In the words of the German philosopher Friedrich Nietzsche (1888), "Without music, life would be a mistake."

Does music lie at the heart—and brain—of what it means to be human? The question of the origins of music is without doubt of great interest and is in need of further research as we have only just begun to address the mysteries of music and the human psyche.

CHAPTER 3

Healing

Music has been used in healing for thousands of years. From ancient times and across all cultures, music has been used for emotional expression, communication, religious celebrations, grieving rituals, and entertainment. Ancient Greek philosophers believed that music could heal both the body and the soul, while Native Americans used singing and chanting as part of their healing rituals. The ability to appreciate and respond to music is an inborn quality in human beings.

Music therapy is receiving increasing recognition as a vital part of the health care system and is an appropriate and effective intervention for a wide range of physical, mental, social, and emotional needs. The use of music therapy is also growing rapidly, as evidenced by the increased numbers of participants attending worldwide conferences and the increased numbers of music therapy students at the undergraduate and postgraduate levels of education. Leslie Bunt (1994), a professor of music therapy at the University of West England, describes music therapy as the use of sounds and music within an evolving relationship between the client and the music therapist to support physical, mental, social, emotional, and spiritual well-being. It can also be used to improve physical, psychological, cognitive, and social functioning.

Research studying music therapy intervention includes the amelioration of the impact of abuse such as childhood sexual abuse (La Fontaine, 1990); improved rehabilitation from severe traumatic brain surgery (Glassman, 1991); help for psychiatric disorders (Ficken, 1976); help for families of sexually abused children (Mrazek & Kempe, 1981); survival of premature babies (Nocker-Ribaupierre, 1999); assisting children with eating disorders (Robarts & Sloboda, 1994); helping children deal with traumatic experiences linked to early abandonment, violence, and war (Sutton, 2002); and helping refugee children and those living in multicultural contexts in inner cities (Clough, 2004). For people who find verbal communication an inadequate form of self-expression, music therapy offers a safe, secure space for the release of feelings. It is the special relationship involving the therapist, the music, and the patient that facilitates a desire to express emotions and begin the healing process.

Through whatever form the therapy takes, the therapist aims to facilitate positive changes in behavior and emotional well-being. He also tries to help the client develop an increased sense of self-awareness, and thereby to enhance her quality of life. The therapist adapts the music and style of approach to serve a specific client's needs and the process may take place in individual or group music therapy sessions. The music played covers a wide range of styles in order to complement the individual needs of each client. Much of the music is improvised, thus enhancing the individual nature of each relationship.

History

The more formal approach to music therapy in the United States began in World War II when Veterans Administration hospitals began to use music—instrumental as well as vocal—to help treat soldiers suffering from shell shock. For the first time in history, the U.S. military officially recognized music as an agent capable of helping mentally and physically wounded soldiers and created the music portion of the military's Reconditioning Program (U.S. War Department, 1945). The authorities realized that music helped boost the morale of homesick soldiers and authorized music as a morale-builder and a "drive into battle."

The surgeon general conducted a six-month survey studying the musical tastes of America's war casualties (U.S. War Department, 1945). The survey showed that music could be employed in several effective ways, such as for exercise routines, postoperative exercises for orthopedic or lung cases, educational activities, resocialization, and aiding neuropsychiatric treatment. The War Department's Technical Bulletin 187 provided instructions on the implementation of various

music opportunities offered to patients, pointing out the healing powers of music and its ability to bring groups together, release emotions, and create a spirit of fellowship (Green, 1947; Simon, 1945). In neuropsychiatric treatment, music was seen to influence the mood of the patients by evoking pleasant memories of past experiences. The main objective of active participation with music was to aid in the social readjustment of the patient, to boost morale, and to provide occupational therapy. In passive participation, the goal was to assist in the patient's social and mental readjustment, and to stimulate physiological and psychological responses (McKay, 1945). The activities outlined in the technical bulletin were carried out in the 122 Veterans Administration hospitals and, by late 1945, 44 of them had full-time music specialists who worked closely with medical personnel (Green, 1948, 1950).

At the request of the representatives from the Surgeon General's Office and Walter Reed General Hospital, Frances Paperte, an accomplished vocalist, conducted an incredible 3.5-year research study to determine if music presented according to a specific plan could aid in the recovery of military personnel with mental and emotional disorders (Kaempffert, 1944). The musical treatment sessions were divided into three sections: (a) music playing to create basic rapport between patient and musician (mood-determination), (b) patients talking to the musicians, if desired, and (c) patients participating in the sessions. Medical and musical records were kept on all sessions and on all patients. The results positively demonstrated the healing effect of music, from providing the patient with an opportunity to express emotions rather than submerging them deeply into the subconscious, to promoting relaxation and building of self-confidence, to increasing socialization with others with mutual interests. In summary, the research clearly demonstrated that participation in music assisted in removing the feeling of inadequacy, which is at the core of the neurotic patient (Gilman & Paperte, 1952).

The benefits gained from the music therapy were as varied as the soldiers were. For example, music helped convey feeling without the use of words. For those whose difficulties were mainly emotional, music therapy provided a safe setting where "difficult" or repressed feelings were expressed and contained. By offering support and acceptance, the therapist helped the soldiers to work toward emotional release and self-acceptance.

More Recent Studies

Christian Pross (2001) founded a torture therapy centre in 1992 in a Berlin hospital for victims of torture to help them shake off their traumatized past. Most of the patients here are political refugees seeking asylum, and trauma is always at the back of their minds and can be easily triggered. For example, keys jangling or dogs barking can bring back memories of a prison camp. Music therapy helps drown out those memories and replace them with new memories. Pross believes that music can reach deep into the human soul. He has witnessed clinically depressed patients who could not speak suddenly play a simple instrument with gusto.

It is a widely held belief that music has a beneficial effect on the spiritual and emotional aspects of healing and, for much of the twentieth century, medical policies and practices have been driven by science- and technology-based diagnoses and treatments. However, the twenty-first century brings with it the interest of the medical profession in the anxiety-reducing qualities of music, in particular in the treatment of acute pain. Scientific studies have shown the value of music therapy on the body, mind, and spirit of children and adults. Some studies have suggested that, when used with pain-relieving drugs, music may help decrease the overall intensity of the patient's experience of pain (Curtis, 1986; Tse, Chan, & Benzie, 2005). Doctors in Stockport, England, have been able to avoid the need for psychiatric treatment for anxious or depressed patients in hospital by offering "arts on prescription," which includes weekly sessions of painting, creative writing, drama, and music (as cited in Rorke, 1996).

Rather than using music as a potential distraction while the patient quietly listens, what are the effects of music when the patient is participating in activities connected with the music? Such a study was conducted by Laura Noguchi (2006) to determine if a focus-of-attention activity involving music would affect levels of distress and perceptions of pain in pediatric patients receiving injections (six children, four to six years old). The children heard a musical story or a spoken story or received standard care/control. Those children listening to the story also pointed at corresponding pictures throughout the injection process.

The results of the study indicated that the children assigned to the music activity tended to show the least amount of distress when compared to the other children; however, the differences were not found to be significant. The researcher suggests that this may be due to the small sample size (six children) and that a larger group may have projected a more readily detected difference. Given that adult avoidance of medical treatment has been associated with unpleasant medical experiences as a child (Megel, Houser, & Gleaves, 1998), this area of study is most certainly deserving of further research and attention.

Some studies have found that music therapy can lower participants' heart rate, blood pressure, and breathing rate. Music can induce physiological responses in patients, such as altering the heart rate to relieve anxiety and hypertension, and emotional responses to music can help recover suppressed memories that may underpin physical ailments (Hoffman, 1997). The music therapist may use active or passive methods with patients, depending on the patients' needs and abilities.

No one knows all the ways music can benefit the body, but studies have shown that music can affect brain waves, brain circulation, and stress hormones. These effects are usually measured during and shortly after the music therapy. In the Pamir mountain region of Tajikistan, music and prayer function as a unified whole, as a spiritual power of energy with healing properties. It is also possible that the musical structure promotes cognitive flexibility that might underlie processes of musical healing (Koen, 2005).

Music Therapists at School

Students come from many walks of life; added to that diversified mix is the increasing number of special education students. Quite often the classroom teacher reports feeling unprepared to meet the challenge of having children with special needs in the regular classroom, and these students present a variety of challenges, including cerebral palsy, speech and hearing impairments, emotional disturbances, and severe physical disabilities, with the most commonly referred group consisting of children on the autistic spectrum (Bunt, 1994).

A music therapist is trained to implement strategies that will strengthen an area of a student's life through participation in musical experiences. Music therapy work with children is essentially a social activity involving communication, listening, and sharing. These skills may be developed within the musical relationship with the therapist or in group settings with peers. Children are encouraged to use accessible percussion, ethnic instruments, and their own voices to explore the world of sound and to create a musical language of their own. By responding musically, the therapist is able to support and encourage this process. Ultimately, the skills learned through music therapy may be transferred to other areas of the individual's life.

The role of the music therapist in a school is to assess a student's ability to achieve educational goals and objectives both with and without music. While most children enjoy and benefit from music, it is important to remember there must be a demonstrated educational need for the service. Perhaps the student may benefit from a formal music therapy assessment and, if so, it is advisable to contact a board-certified music therapist to conduct the assessment. The spectrum of learning disabilities is growing daily and the need for involvement with music therapists is becoming increasingly necessary as these students face greater challenges in the classroom.

In a group setting, the music therapist has the opportunity to structure musical experiences for the student to practice skills with his or her peers. When considering the disabled student, examples of transfer skills include an increase in appropriate social interactions or an increased ability to remember academic concepts that are introduced in a song or, for a physically disabled student, the ability to grasp a mallet for twice as long in order to play a drum. Music has the potential to assist these students in areas such as speech and language development and motor and social skills.

DeBedout and Worden (2006) conducted a study assessing the effects of music therapy on the behavior of intellectual disabled children. She studied the vocal responses of school-aged children who had severe intellectual disabilities (SID) when responding to the presence of a music therapist, or a switch-activated toy and recorded music. The findings of the study indicated that the presence of the music therapist singing to and playing with a child with SID was more effective than other stimuli used in the classroom to evoke movement responses. The conclusion was that music therapists, when working in the school setting with children with SID, play a significant role in evoking stimulation responses from the children and can assist in transferring the student's motivation toward self-help skills, social skills, and communication skills.

Autism is a disorder affecting both children and adults in which they fail to respond to normal sensory stimuli and is the fast becoming the most referred group of children to therapists. Edgerton (1994) studied the effects of improvisational music therapy when working with autistic children. The results indicated the positive effects of music therapy on the communicative behavior of the children and these effects were beginning to be generalized.

Although over the years a variety of methods of treating autistic children have been tried, it is only recently that therapy involving exposing autistic children to music may be helping many victims of the disorder. The French otolaryngologist Guy Bérard (as cited in Lehrman, 2007) believes that one of the causes of autism may be the way its sufferers respond to sound—that the sounds around them are simply overwhelming them. He contends that if a child is not interpreting what they are hearing correctly, it is then impossible to understand sounds. It affects language development because it is not possible to get meaning or emotions.

Digital Auditory Aerobics (DAA) is a mechanical means of achieving an improvement in auditory discrimination through an intensive form of music therapy that Bérard developed, called Auditory Integration Training (AIT). The treatment consists of half-hour sessions administered twice a day over a total period of ten days, for a total of twenty sessions. (See www.auditoryintegration.net for more information.)

Distortions in auditory discrimination are present in many common learning disabilities, such as dyslexia and attention deficit disorder, and in many more complex problems, such as autism, pervasive developmental delay, and depression. It is widely recognized that high-quality early childhood education programs increase children's chances of achieving future success and becoming productive members of society (Gestwicki, 1999). The National Association for the Education of Young Children (NAEYC) (1997) recommends Early Intervention (EI) programs for all children in need. This program provides for all areas of a child's development through an integrated approach, which includes play based on individual needs and developmental abilities. Through play children learn to understand and explore their environment, and seek to have their needs met through the use of language (Gestwicki, 1999). Thus, when the emphasis is taken away from the more customary mode of verbal communication, children easily learn to communicate. Halliday (1977) states that as children's use of language grows and the need to attach meaning to the words increases, so too is the potential for later success in literacy. The child is predisposed toward rhythm and melody and this makes music and movement an ideal tool for teaching the many facets of language: listening, speaking, reading, and writing (Kolb, 1996). Music therapy provides a viable means of including young children with different abilities in highly successful learning activities (Standley & Hughes, 1997).

Dena Register (2001) studied the effects of an early intervention music therapy curriculum on prereading/writing. In the study, four- to five-year-olds received two half-hour classes weekly for six months. The music therapy treatment utilized a variety of activities in an effort to promote cognitive skills, socialization, and movement. Results supported Standley and Hughes (1997) research findings that indicated preschool children demonstrated a high level of attentive behavior during music therapy sessions and sustained attention on task behavior for approximately 97 percent of the session's duration. Additionally, the children experienced a high level of success, responding correctly to teacher directed tasks with greater than 90 percent accuracy. Furthermore, results provided evidence that music sessions designed with specific academic measures in mind were more effective than sessions that provided general music activities. Therefore, a music therapist may wish to focus on the systematic use of music in the early childhood classroom to provide another venue to teach critical skills. The study also suggests that balancing activities that focus on all forms of language competence and working closely with the classroom teacher and paraprofessionals contributed to the success of this program (Weir, 1989).

Attention deficit hyperactivity disorder (ADHD) has recently been receiving more frequent attention in professional circles, and for a child suffering from ADHD, the use of music therapy, in combination with medications, may provide the premier treatment option. Music therapists working with young children will most likely increasingly treat children with a diagnosis of ADHD. While most children require the use of creative avenues of therapy, lyrical music enables a child to view another individual's expression of frustration and listen to thoughts relating to the consequences when making irrational life decisions. Additionally, music therapy can provide a calming, sedative effect and assist a child with focusing on the task. As a result, children may develop a greater awareness of themselves in relation to others. This may include developing greater confidence in their own ability to make relationships and to find positive ways of making their needs known. It may greatly enhance their self-esteem.

Few researchers have studied children with visual impairments. Social skills used by children and adults are learned incidentally through observation and modeling to the extent that 85 percent of what sighted individuals learn is learned through the eyes (Children's Center for the Visually Impaired, n.d.). Furthermore, nonverbal cues can be difficult for persons with visual impairments to discern, such as expressive gestures. However, simply integrating visually impaired children into peer social situations does not result in interaction and acquisition of important social skills. This requires careful manipulation of the environment and intervention strategies. Structuring opportunities for preschoolers to interact with peers in their environment provides them with the opportunities to practice small-group interaction skills (Robb, 2003).

To participate in group activities, children need to maintain focused and sustained attention for a period of time. This becomes a challenge for the visually impaired because they do not have the help of their vision to maintain attention as sighted children do (Best, 1991). Perhaps the task of listening can be made easier if the relevant sounds of an activity stand out from the plain background noises. Music is an auditory medium that music therapists use to enhance a child's attention (Jellison, 2000).

Music therapists can manipulate the learning environment in several ways to promote the acquisition of social skills. Research by Robb (2003) clearly suggests that music can function to significantly increase attentive behavior in a group instructional setting. He solicited levels of arousal in the study participants. "Arousal" is defined as momentary alertness in the

information processing system (Plude, Enns, & Brodeur, 1994) and is therefore worth considering when assessing the effectiveness of music therapy intervention programs. Of further interest is the fact that the processing of music stimuli occurs in the same centers of the brain that are associated with emotion, arousal, and pleasure, suggesting that listening to music affects arousal and mood, which in turn influences performance on a variety of cognitive tasks (Husain, Thompson, & Schellenberg, 2002).

Taking this one step further, Kern and Wolery (2001) evaluated the effect of playground adaptations and staff development on the participation of a three-year-old boy with congenital blindness. These adaptations involved adding musical stations in strategic locations on the playground connected by a path that provided auditory feedback. The music therapist instructed the staff who supervised the child. Children with visual impairments need assistance in managing large, undefined spaces (Warren, 1994), and it is their hearing and tactile senses that are the primary sources for connecting with and understanding their social and physical environments. Of utmost importance is increasing the frequency of their interactions with peers. Music therapy can be used in the early intervention of children with severe visual impairments to provide aural feedback on a child's location within a large space, and thus promote independent movement from one place to another (Salas & Gonzalez, 1991). Kern's research findings add support for the assertion that music therapy has a role in the early intervention with children with disabilities.

Kern and Wolery (2001) implied that providing musical stations and a path between them was not adequate and that staff training was necessary. In this study, the music therapist designed the musical stations and trained the teachers with therapeutic goals in mind to provide the best possible environment for the child's development. She also suggested expanding the role of the music therapist to include training and consultation. Despite the limitation of this study (only one subject), the child benefited in meaningful ways from the services of a music therapist. Further studies are needed which apply music therapy to playgrounds and in early intervention programs.

Music can significantly change mood and relieve stress, working on many levels at once. Many experts suggest that it is the rhythm of the music or the beat that has the calming effect on us although we may not be very conscious of it. They point out that when we were a baby in our mother's womb, we probably were influenced by the heartbeat of our mother. We respond to soothing music at later stages in life, perhaps associating it with the safe, relaxing, protective environment provided by our mothers.

The benefits of the music therapist are not exclusive to the classroom teacher. Students, teachers, classroom aides, administrators, and parents can all benefit from interacting with a music therapist. The music therapist can introduce techniques and strategies for classroom teachers and aides through either consultation or direct services, alleviating stress, improving the overall attitude in the classroom, and improving teacher retention. The strategies provided by the music therapist can be extended to parents for use at home, and also adapted to the various ability levels of the students within a group setting (Patterson, 2003).

Listening to music can be one of the most soothing or nerve-wracking experiences. Choosing a specific style of music for any individual is difficult. For example, in some studies many of the meditation and relaxation recordings actually produced adverse electroencephalogram (EEG) patterns similar to hard rock and heavy metal. However, selections of Celtic or Native American music were considered to be extremely soothing. The most profound finding was that any music performed live had a beneficial response. Whenever the musical sounds were experienced, right-left brain hemisphere synchronization occurred, suggesting the human body is extremely responsive to sounds and responds specifically to certain tones and frequencies.

Another area of music therapy focuses on the natural connections between the interaction of infant and parent and the building blocks of music. These provide vital points of reference for the music therapist. For example, Papousek (1996) describes the natural intimate and emotional prelinguistic codes of communication between an infant and its mother. These codes are based on vocal musical elements of dynamics, melody, pitch, rhythm, and timbre, which become the building blocks of communication. Working with the young child, the music therapist uses these means of communication to discover the healthy parts of the child and through music reinforces the child's capabilities.

The music therapy studies mentioned include available research and show the need for additional music therapy research in early intervention specific to children with visual impairments. Robb (2003) suggests a need for further studies examining how music functions to influence visually impaired students' levels of arousal and performance on attentional tasks. There is also a need for more research indicating how music therapy can help children with wide-ranging ages and problems and also leading to an understanding of the musical processes contributing to specific therapeutic outcomes (Bunt, 1994). Such further research will help music therapists working with children with varying needs to help them emerge and reach their full potential.

Music therapists work with children and adults who have a wide range of needs, including learning disabilities; physical, emotional, and psychological disorders; and sensory impairments. They work in a variety of settings, such as hospitals, special schools, daycare centers, prisons, in the community, and in private practice. In all work settings, music therapists function as part of a multidisciplinary team, and their observations add greatly to the understanding of each client's needs, abilities, or problems. The music therapist can also act as a surrogate parent to troubled children. While there is no way to predict the future for such children, a music therapist can be prominent among the caring adults who might prompt them to move in a positive direction, and provide them with the emotional resources to heal and rescue themselves. The ultimate goal is the educational growth and development of the student, and to this end the music therapist plays a key part.

CHAPTER 4

Gifted Children

Children with special needs cover the spectrum of ability from challenged to gifted, and each extreme warrants consideration when the child is immersed in an education system designed for the masses. In the previous chapter, I addressed the needs of children with various challenges. I would now like to discuss the equally demanding and challenging needs of the gifted child.

In many cases the exceptional child's needs are met by extracurricular activities initiated and perhaps funded by the parent or caregiver. This raises the question of the exceptional child living in a disadvantaged environment. What can be done to ensure that child develops to his fullest potential?

Throughout history there have been many gifted people in a variety of fields from Albert Einstein (physics) to Leonardo da Vinci (art) and from Baryshnikov (ballet) to Tiger Woods (golf). However, in the field of music, the greatest gifted *child* prodigy was Wolfgang Amadeus Mozart, whose acute sense of listening and sensitivity to sound, pitch, and the overall properties of music were recognizable from birth. Mozart spent considerable time playing the piano and composing music. His father spent incredibly long hours each day at the piano teaching his three-year-old son, as did Ludwig van Beethoven's father. How many child prodigies might we discover today if the environment were similar? More recently, researchers have found that during the early stages of music instruction, children who are provided with parental support and encouragement that emphasize intrinsic rewards tend to persist in their music learning. Such children possess an underlying motivation with intense concentration and passion. Passion provides a desire, a need, or a longing that persists long after discipline or motivation pass. In contrast, the opposite is apparent—children from unsupportive families tend to give up playing at an earlier age (Sloboda & Howe, 1991).

Other influencing factors in the gifted child's development are the educators who assist the parents. Research by Sloboda and Howe (1991) indicates that the most influential educators had a personal warmth, made lessons fun, and showed a fondness for the young student. According to Solomon (1995), Mozart's father could inspire and nurture his students' talents by instilling a commitment to excellence and a sense of unlimited devotion. The impact of teachers and parents on the overall development of the gifted child is quite significant and is crucial to sustaining involvement (McPherson, 2005).

What then can caregivers and educators do to assist the gifted child along the path to her fullest potential? Research indicates that the caregiver's perceptions of the young child's giftedness are usually accurate and are based upon behaviors observed between the child and her peers. However, caregivers may not have confidence in these perceptions. Levine (2002) believes that all children possess gifts or notable strengths. However, he dislikes labeling children "gifted" as if "they are among the lucky few who possess super-neurodevelopmental profiles" (p. 262). He goes on to say, "There is no such thing as a perfect mind. Therefore, every gifted child has some discrete areas of weakness that could cause problems someday. Furthermore, every child I've ever met has had at least one area of potential or actual giftedness as part of his or her neurodevelopmental profile" (p. 262).

Assessment

The most immediate problem is deciphering whether a child is gifted and to what degree. For the most part, the accumulated body of research in the twentieth century has dealt with assessing those children with learning difficulties (Elliott, Argulewicz, & Turco, 1986). The lack of standardization in this area of assessment simply adds to the problem. Assessment of the young child's intellectual giftedness tends to be somewhat unreliable, and scores can be altered by individual insecurities

during the testing. However, there are benefits to assessment that provide information regarding appropriate stimulating environments for the child. For example, an intellectually gifted child may benefit from early entrance to preschool or an enriched curriculum designed specifically for his needs. In many cases, children who demonstrate giftedness in one area of development may show signs of weakness in other areas, and testing offers the means to assist the child in practicing these skills. Most important, testing offers a baseline score that may be critical in monitoring the child's intellectual growth and progress over time.

There are two individually administered IQ tests that are appropriate for testing preschool gifted children—the Wechsler Preschool and Primary Scale of Intelligence Revised (WPPSI-R) and the Stanford-Binet Intelligence Scale, Form L-M. Both are mainly verbal tests, with the Stanford-Binet offering a more extensive scale for the very gifted child. For the very young child who is already reading and doing math calculations, it is also advisable to conduct an achievement test orally in a one-on-one setting to attain the most accurate results. Scores become even more reliable when tested around first grade. Once the child is of school age, testing takes place either privately with a private psychologist or by the school psychologist. The intelligence tests of choice are the Wechsler Intelligence Scales, which include a preschool test, a school-age test, and an adolescent/adult test. While these tests are helpful for identifying strengths and weaknesses, they are not necessarily helpful to the gifted child whose score may exceed the limit of 155.

The work of Francoys Gagne (2003) is based on standards used around the world in education and distinguishes between giftedness and talent. He describes talent as a demonstration of superior skills or competency following specific training in a field, such as perhaps music. He defines giftedness as an above average natural predisposition to achieve, and this aptitude is enhanced by a stimulating environment. The environment in conjunction with accumulated practice over a period of approximately 10–15 years spurs the developmental process (Sloboda & Davidson, 1996; Winner, 1996a, b).

Using behavioral rating scales to identify gifted children from majority and minority groups is beneficial for planning programs suitable to these children. One such scale is the Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS) (Renzulli, 1986). A study by Terman and Oden (1947) revealed that the home environment played a crucial role in the potential IQ scores of gifted children. Approximately one-third of children identified as gifted in the study were children of professional people and about a half were children of persons in business occupations. Therefore, IQ scores reflect educational opportunities of the test takers, a result which suggests that a rich environment causes an increase in IQ scores (Taylor, Hinton, & Wilson, 1995; Tyler, Rafferty, & Tyler, 1962).

Helping the Gifted Child

An enriched, stimulating environment is a necessary tool in assisting the gifted child's development. Shin'ichi Suzuki (1983) based his Japanese Suzuki education system on the belief that all children are musical and can develop musically when exposed to the best possible environment. He makes the comparison to the young child learning to speak his native tongue. It is Suzuki's belief that it is the child's environment that provides him with the high-quality example and opportunity to repeatedly practice under close interactive supervision with the responding adult. Both child and caregiver engage in daily conversations with each other until eventually both are communicating, and the child learns to perfect his language through interaction with the caregiver. Suzuki proposes that music can be learned in a similar manner, through repeated nurturing on the part of the caregiver.

CAREGIVER

When selecting a caregiver or preschool for the young child, communication and consistency between home and school are vital for sharing in the child's developmental milestones, and a daily journal exchange can facilitate this communication. In general, the gifted child may express a thirst for academic learning, and the staff's recognition of his giftedness, individual differences, and needs will promote an environment that values the unique creative and learning abilities of the child. Realistically, no matter how excellent the caregiver or school, the needs of the gifted child may not be fulfilled. Many gifted children start school as highly engaged learners and rapidly become disengaged, encountering serious difficulties as they become bored when their knowledge surpasses that of the teacher. When selecting schools, parents will need both persistence and realistic standards. Continued open communication and creative problem solving between parent, child, caregivers, and educators will influence decision making in a more concrete way. Sadly, due to lack of funding and teacher awareness, many of the specific

needs of gifted children can only be met outside school, and outside opportunities are less accessible to children in lower socioeconomic environments. This is a shameful waste of a wonderful human resource (Clark & Akerman, 2006).

AT HOME

At home, parents who are the primary caregivers can enhance their child's learning by encouraging exploration, a love of reading, and an appreciation for culture, the arts, the environment, and the world community, just to mention a few. The initial stages of a child's musical development take place at home with the parent or caregiver. A piano or guitar played by an amateur musician-parent becomes the basis for many sing-alongs and play-alongs. Songs aid in language development and are the first building blocks of a developmentally appropriate music curriculum, while musical stories (without visuals) encourage children's listening skills. The constant interactive singing and talking between child and caregiver develop in a manner very similar to language development and are improvisatory in style, with tonal development mimicking the speech patterns of the caregiver. Dancing to music facilitates the child's coordination and love of music while encouraging a less inhibited family unit.

An important aspect of the child's learning is the inclusion of opportunities for social interaction. When a child is interacting with others, he learns skills that are crucial to further peer relations and teamwork. Musical games provide many avenues for exploration and practice in the art of people skills and offer the added benefit of providing practice in problem-solving skills. Of further importance is motor development, and play is an ideal way to fine-tune gross and fine motor muscle groups.

AT SCHOOL

Education for gifted students is focused on matching curriculum to advanced ability using a curriculum based on the unique characteristics and individual learning needs of the gifted learner. What are the needs of the gifted child and how can the classroom teacher provide these children every opportunity for learning? Depending on the child's particular area of exceptionality, the teacher needs to pull from her "bag of tricks" activities that are stimulating and interesting to the child, without disrupting the classroom routine for the other children. The extensive range of learning requirements for gifted children presents quite a challenge for the classroom teacher.

Learning Requirements

Unusual retentiveness. The child presenting unusual retentiveness benefits from exposure to a wide range of topics and vast quantities of information. The segment on Prokofiev's *Peter and the Wolf* in chapter 9 enables this child to present to the class pictures of the instruments representing the characters in the musical story and to elaborate upon how these instruments are made, how they compare to each other by sound produced and materials used. These children enjoy sharing their extensive knowledge with their peers.

Advanced comprehension. Within each lesson plan in chapter 9, there are tools to elaborate and offer access to a more challenging curriculum. For example, during the rhythm and time signature component, the class concentrates on feeling the pulse of the music either through clapping, beating a drum, or stepping, etc. Providing learning activities of appropriate level and pace, such as encouraging this child to clap the rhythm of the music against the steady beat of his peers, enhances advanced learning.

High verbal skills. Mozart and the Young Mind (MYM) is based upon a repertoire of songs that facilitate the learning of basic musical concepts. Learning the words to these songs may take some time for young children, and providing the highly verbally skilled child with the opportunity to lead the group in song or discuss the meaning of the song adds further opportunities for in-depth discussions.

Flexibility of thought processes. Gifted children find music class to be the ideal venue for using imagination, imagery, and spatial abilities. Moving to music with the use of scarves to express a story line, such as the biblical fable "The Lion and the Mouse," or in response to how the music "feels" in the music of the American Gershwin—as opposed to the Japanese song "Sakura" or the Norwegian Grieg's "Hall of the Mountain King"—promotes problem solving and creative thinking.

Independent learning. Provisions for self-direction and development of independence for these children is clearly active during mapping exercises. Each child is encouraged to listen to a song sung by the teacher such as "Row, Row, Row Your

Boat” and draw the interpreted phrasing individually with a marker on bristol-board. There is no wrong or right answer, as the song is experienced, expressed, and represented in the drawing. Each child is actively involved in learning while sharing his work with the other children involved in this independent learning task.

Holistic thinking and emotional sensitivity. Small-group activities and an integrated approach to the curriculum work best with these children, such as working in partners during the “Clap, Clap, Clap” song or “Hello, Hello.” The children interact with each other by holding hands, shaking hands, or waving good bye to their special partner. Rowing the boat in “Row, Row, Row Your Boat” is demonstrated by two children sitting and facing each other, holding hands, and rocking in the same direction to the beat of the music. These children enjoy the interaction with their special friend and holding hands, and they need to be sensitive to the partners’ needs and responses to the song.

Creative Thinking

Four of the classic childhood creative abilities as suggested by Guilford (1968) and Torrance and Safter (1990) are listed as follows: Fluency, Flexibility, Originality, and Elaboration.

Fluency is the ability to produce many ideas in response to an open-ended problem or question. The ideas may be verbal or nonverbal (e.g., mathematical or musical). A good fluency exercise is rhythm mirroring. Apart from helping with mathematical development, this activity reinforces the child’s sense of rhythm. Using a pair of rhythm sticks for each child, and having established rhythm patterns with a clapped response, rhythm patterns can now be increased to two or three varied speeds faster or slower to create interest. Asking students to eliminate—such as minify, condense, lower, shorten, lighten, omit, split up—or change pace—such as change schedule, reverse, transpose, make opposite, reverse roles, turn upside down—adds further interest for the gifted child.

Flexibility is the ability to take different approaches to a problem and think of ideas in different categories, or view a situation from several perspectives, such as introducing playing an instrument to complement singing or to make a familiar story more familiar. Using instruments promotes hand-eye coordination, rhythm development, and a sense of sharing. Of further interest to the gifted child is “musical ice skating,” which aids in physical development. Choose gentle classical music and provide a pair of party plates to each child. Ask students to place the plates on the floor and to stand on them. Play the music and encourage the children to ice skate by demonstrating how you slide one foot and then the other as if ice skating on plates. Combine ideas, uses, and purposes by moving slow or fast, forward or backward, and turning, as well as balancing on one foot. The swishing sound created by the friction between the plates and the floor adds an extra rhythmic dimension to the activity. Asking the gifted child to trace the shapes of letters, or numbers, or geometric shapes with his feet continues to create interest and challenges.

Originality is a uniqueness or nonconformity. Knowledge and understanding of the diverse world in which we live may be introduced through displaying musical instruments from different cultures—wooden instruments are ideal because they produce a hollow, low-pitched sound, which is not as piercing as other high-pitched instruments and won’t disturb others who are working. To create further interest, substitute, simplify, subtract, or use other materials, other approaches, other children. Adapt other parts, motion, color, sounds, function, and textures, while magnifying, modifying, and minimizing, i.e., make the concept bigger, smaller, lower, higher, or add time or sound, exaggerate shape, make stronger or weaker beats.

Elaboration is the important ability to add details to a given idea: developing, embellishing, and implementing the idea. Activities such as providing a music shelf to which the children have access, and using creative stories for group activities to enrich the gifted child’s vocabulary and encourage creativity with language also assist in memory retrieval. Listening to Benjamin Britten’s “Young Person’s Guide to the Orchestra” sparks further improvisation with instruments, such as those made with different materials, for example, empty paper towel holders filled with beans or rice, bowls covered with plastic or coffee cans with lids for drums, and pan lids for cymbals. The gifted child can be encouraged to experiment with transposition by reproducing simple tunes in varying keys and developing the ability to transpose.

The use of real-life activities encourages original thinking and independent learning, while addressing the issues of values and feelings. For example, spending a day on a farm is a wonderful exploration area for urban and suburban children, while visiting the city with its many art museums, parks, conservatories, museums of natural history, aquariums, observatories, nature centers, and concert halls provides endless learning opportunities for all. Not to mention bringing history alive with a visit to a senior citizens home or spending an afternoon with great-grandparents.

The bottom line is that all children benefit from and deserve enrichment activities and experiences. Bright children benefit from and deserve acceleration. But gifted children may need a completely different learning environment, or mentorships, or rapid acceleration, or all of the above. The key is a truly individualized education, based entirely on the needs and abilities of the child.

The goal of the MYM program is to create tools that will ultimately engage all children in the process of harnessing their creativity and the enjoyment of sharing their creativity with others. The following is a framework of how MYM can be used to enhance this curriculum, keeping in mind the flexibility it offers to meet the challenges and address the needs of the gifted child. This guide is based on the developmental stages of children aged three to six years with suggestions for enhancing the current curriculum with creative thinking skills for the gifted child. Enrich a mind and imagine the possibilities!

Physical Development

The objective for physical development with young children is to explore the many ways in which a body can move while developing large and small motor skills and improving balance, coordination, and rhythm. Here are some concepts in physical development: Pathways: We move through space creating pathways with our feet and our whole body. We can move from point A to point B using methods:

- In a flexible way (roundabout, waving before arriving at given point)
- In a direct way (no deviation in pathway)
- In free flow (running, leaping, difficult to stop)
- As bound (restrained action and position)

Encouraging physical development involves a few key methods and terms, as follows:

- Self-space: Movement performed in place (stationary movement).
- General Space: Movement that takes you into general space (locomotor movement). For an exercise using general space, ask students to listen to the following “stationary” words and do what each word says: stretch, bend, twist, float, rock, shrink, sway, drop, etc. Tell students, “When I say ‘STOP,’ come back to the rest position and listen to the following ‘locomotor’ words and do what each word says: walk, run, skip, slide, flee, prance, leap, hop, etc. When I say ‘STOP,’ PAUSE.”
- Movement Sentence: Two or more action words performed one after the other, for example, two action words such as “walk—stretch”; three action words such as “run—twist—freeze”; four action words such as “glide, turn, flee, and pause.” Now encourage the students to create their own movement to sentences and share in small groups.
- Movement Sentence Accompaniment: Music with vocal accompaniments. Ask students what each word would sound like and let them use that sound as they move. Using small percussion instruments for jingle (bells), rattle (maracas), scrape (quiro), ring (triangle), and strike (drums), determine as a group which type of instrument would be appropriate to accompany each action word you choose.

Cognitive Development

The objectives for Cognitive Development are to:

- Refine aural skills by noticing the differences in sounds.
- Increase awareness of different movements or body positions.
- Develop creativity and imagination by responding to sounds in the environment.
- Enhance the acquisition of mathematical concepts through involvement with music.
- Explore rhythm and timing and its relation to fractions within a whole.
- Explore cause and effect (creating sounds and mixing them together). Examples include:

Toumba, Toumba, Toumba, Toumba Toumba Toumba Toumba
 Tra-la-la trili-trili-tra trili-trili tra-la
 Fa-la-la-la-la, fa-la-la la-la, fa-la-la-la-la-la

Story telling is an effective way to promote cognitive development. After rereading a familiar story such as “The Lion and the Mouse,” help children structure the story by asking questions about:

- Setting—where does the story take place? And when?
- Characters—who is in the story?

- Theme—what is the story all about?
- Plot—what happened? How does it end?

MYM offers opportunities to explore music forms, sound, movement and music, and group ensemble time together, thus supporting:

- The child’s total development—physical, emotional, social, and cognitive
- Learning through active interaction with adults and other children as well as with various music materials
- Learning activities and materials that are real, concrete, and relevant to the lives of children
- Opportunities for children to choose from among a variety of music activities, materials, and equipment of varying degrees of difficulty; and
- Allowing children time to explore music through active involvement

Literacy Development

Music has always played a central role in the education and development of young children. Singing, dancing, and other music activities enhance other areas of development, including perception, fine motor skills, language, and social interaction. These activities involve “thinking in music” and thinking about music or music appreciation. Creating their own music-work is one way in which children create meaning in their lives. But they can also discover meaning in the music created by others and in nature, and that discovery is the core of music appreciation. While engaging children in creating music, we can also connect them to the world of music beyond their own actions.

Early literacy, math, and science are the primary focus in the early years, and MYM can assist in bringing these subjects to life by focusing on creative thinking, problem solving, vocabulary, and comprehension.

Here are some suggestions on using children’s creative experiences with MYM to develop a knowledge base about music while supporting early literacy and creative thinking:

- Ensure that each child feels safe and secure expressing observations and opinions about music. Sharing one’s response to a work of music is a public revelation about something highly personal. Each child must feel comfortable enough to reveal him/herself in this way.
- Help children to experience fine music. High-quality recordings are available to complement attending live orchestral performances.
- Connect children to music in the community. Invite parents to perform the music of their culture, visit orchestras at work, and then provide each child with the opportunity to compose his own music.
- Observe music as it occurs in nature and talk about the sounds and silences in everyday life. Look at examples of nature depicted in music and ask what the child thinks a composer found most interesting in a flower or rock or animal. Children are natural observers. By helping children consider what they see from an aesthetic perspective, you can simultaneously promote their appreciation of the natural environment and the music it inspires.

Socioemotional Development

Successful socioemotional development includes the abilities to:

- Participate in a group
- Develop social skills by making music together
- Express anger, fear, joy, and other emotions through music
- Recognize that moods and feelings can be expressed through music
- Enhance self-concept by sharing the music of each child’s culture

Use the following exercise to draw children into a piece of music. Ask the following questions:

1. Pick one piece of music work and study it carefully.
 - a. Who is the composer?
 - b. What is the title of the music piece?

- c. What would you have called this piece of music if you had composed it? Describe the tonal shapes that you hear in the music.
- d. Do the shapes fill up the space?
- e. Is there a lot of space in between or around?
2. What type of sounds do you hear? (loud, quiet, staccato, legato?)
3. What type of instruments do you hear? (stringed, brass, wind, percussion?)
4. What feelings or emotions do you think the composer was trying to get across?
 - a. What kind of feelings do you feel when you hear this music?
5. What is the focal point or the area of the composition that stands out?
 - a. Why does it stand out? (Is it because of the choice of instrument or because it's more interesting?)
6. What is happening in the music?
 - a. Does it remind you of other things?
 - b. Does anything repeat itself?
7. Is this music about another culture?
 - a. Is this a universal theme? (Is it understood by other cultures as well?)
8. What words would you use to describe this music?
 - a. Did you learn anything from this music?
9. Do you like this work of music?
 - a. Why or why not?
10. Do you feel you understand this music better now that you have answered these questions? Why?

Appreciation of music for its own sake is both possible and valuable for young children. Too often, adults limit music experiences to the making of music. By helping children grow from music makers to music appreciators, you can deepen their understanding of the world and enrich their lives in the process. Few people continue creating music beyond childhood. But music appreciation is a skill and a pleasure that can last a lifetime.

Integrating Music with other Curriculum Areas

Where does learning through music fit into the curriculum? Music has a natural connection with other activities that children enjoy. Here are a few of the many possibilities for tapping these connections and creating an integrated curriculum.

Drawing to Music: From time to time you may want to try playing music, perhaps Beethoven's "Ode to Joy" from his Symphony no. 9, and see how this affects the gifted child's ability to draw or paint. It is best not to stress "drawing to music" or to give the children any special instructions about how to do so. Movement is especially prominent in some music activities, such as finger painting or drawing in sand. Try asking questions to focus a child's attention on movement: "How is your hand moving when you are making those wiggly lines? Can you do it again and do it differently?"

Dramatic Play: During dramatic play, to perhaps the "Hall of the Mountain King" from *Peer Gynt* by Grieg, it is not advisable to interrupt with a string of questions that pull children out of a make-believe play scenario; an occasional comment or question during dramatic play can increase the gifted child's awareness of how movement communicates to others. It is useful to ask questions to encourage the children to think about the actions, characters, and cause-effect relationships in the story. Remember that the goal is not the accuracy with which the story is acted out but the thinking, creativity, and imagination that the activity stimulates in the children.

Music and Movement (song suggestion: "If You're Happy and you Know it, Clap Your Hands"): The music of words—language itself made up of sounds and rhythms—shares many of the qualities of music. Poetry is closely akin to music, and much of the poetry that children love is especially rich in word sounds and word invention "it's a cream world, sugar and dream world, yogurt, carrots and sunbeam world." Stories by writers such as Edward Lear, A. A. Milne, Dr. Seuss, and Kay Douglas (who wrote "Yours for the Dreaming," designed to complement the MYM program) are delightful resources in sound, music, color, and word play.

Reading (song suggestion: "Flight of the Bumble Bee" by Rimsky-Korsakov): A great many children's books are rhythmic and full of rhymes, repetition, and other musical sounds. Such books are meant to be read or chanted aloud, and they offer many opportunities for children to join in. Some teachers like to use music or sound effects in conjunction with reading to children or enacting a story with puppets. Background music can accompany the moods of the story. Or the music may be chosen to evoke characters or events in a story—a rainstorm, a swan skimming along the water, a bee buzzing ("Flight of the Bumble Bee"), a heavy-footed giant (slow beating of the drums), or a delicate fairy (tinkling of a tiny bell).

Books: You can use pictures in books to stimulate children’s awareness and creative thinking. For instance, when pre-school children were asked, “What do you see in this picture?” (referring to the doodle pages from “Yours for the Dreaming”), they responded with the most creative descriptions, such as “ladybug, eyes, shell, bubbles, whales, dots, the sun”—all from the same picture. Children find this creative use of imagination challenging and fun.

Language (song suggestion: “Willoughby, Wallaby, Woo”): Development of language consists primarily of extending the child’s speaking ability to include functioning with written language. The subtle preparation for language is offered through a rich diet of songs and stories and is easily incorporated into the regular curriculum with MYM. Songs can be sung in different languages, rhyme songs can be used to emphasize phonetic endings to words, and vocabulary can be expanded by singing theme songs (e.g., story telling through song as found in MYM).

Videos and Recordings: These may also be used in the classroom to present the music, art, and dance of various cultural groups. They offer the opportunity to expand the range of multicultural experiences in your classroom and can also help teachers who are not comfortable with various music forms to build their confidence in teaching the music.

Success with Helping the Gifted Child

MYM outcomes for the gifted child include:

- Increased self-awareness
- Increased development of creativity skills
- Improved reading literacy
- Improved teamwork skills
- Enhanced mathematical skills
- Introduction to the enjoyment of music

MYM outcomes for teachers include:

- Increased development of creativity skills
- Availability of resources and tools that can be employed in the classroom

There is no doubt that genetics play a key role in the gifted child; however, one cannot dismiss the effect of a nurturing environment on the overall talent of the child. It is the interplay between giftedness and talent that appears to be of utmost importance, while the need for further research is crucial. Not all children are gifted, but all children are unique, wonderful creations of God, and whether a child has an aptitude for music, is musically talented, or musically gifted may not surface until such time (i.e., window of opportunity) as a child begins to study music. At this time, the musically gifted child progresses at a remarkable pace with little or no guidance, demonstrating an obvious interest and enjoyment in music. When it comes to educating the gifted, a truly individualized curriculum is not just a good idea—it’s an absolute imperative.

CHAPTER 5

Teacher Training

In an ideal world, classrooms are filled with children eager to learn and teachers from every expertise instructing these global inventors of tomorrow. However, despite the best of intentions, reality demonstrates that this is not quite so. Between financial cutbacks, lack of specialist teachers, regional and logistical issues, diversity of students and families, and rapidly changing lifestyles due to technology, the classroom teacher often feels less than qualified to teach the vast array of subjects to children who bring with them their own set of issues.

Standards for Early Childhood Education

In the United States, the National Association for the Education of the Young Child (NAEYC, 2001a) established standards for early childhood professional preparation. The immediate need of any early childhood education program is to address the NAEYC standards with emphasis on developing specific necessary skills. The program promotes general and professional education in an integrated fashion.

In June 2000, MENC: The National Association for Music Education, NAEYC, and the U.S. Department of Education convened an early childhood summit with the intention of taking a proactive approach to music education and supporting the core idea that music education is basic education and can stand alone as an essential educational tool of early childhood development. The research in support of this thought is discussed in chapter 1, and a listing of further accessible resources can be found in chapter 10. In summary, NAEYC proposed the following: (1) music education provides long-term cognitive benefits and is essential to the early foundation for learning for the young child; (2) music provides opportunities for the early learning of life skills such as cooperation and teamwork, and (3) music contributes strongly to “school readiness” by developing basic cognitive, social, and motor skills.

The NAEYC standards describe high-quality associate degree programs based on its vision for all future educators and discuss the processes and timeframe for this associate degree (available online at www.naeyc.org). The NAEYC emphasizes the connectedness of all education while stressing core values and the uniqueness of each stage of learning, with particular concentration on the details of the various settings in which early childhood educators are prepared. These core standards include promoting child development, building relationships between families and communities, documenting observations and assessment, and teaching and learning as demonstrated by meaningful curriculum that is developmentally effective and based upon understanding of content knowledge.

Problems in Teaching Music in Early Childhood

In the beginning years of a child’s life, parents and caregivers provide the first influence on a child’s cognitive and emotional development. Between the ages of three and five, developmental influences are generally provided by parents, caregivers, and specialist or nonspecialist teachers to build bridges to formal education at age five. Quite often a child’s early education is provided by an early childhood specialist who is enthusiastic about music education, but who has limited formal vocal and instrumental training. Frequently, singing is performed in a range not suitable to the child’s voice, and the educator lacks confidence in his musical ability. If there is a music specialist, she is faced with interrupting the classroom routine to conduct a

music class, not knowing the children's names and personalities, and being assessed based on the performance abilities of children so young. Both seem a recipe for failure. How then do we provide the young child with the quality music education necessary for optimum learning and how can educators better prepare themselves for such a worthy cause?

Let us begin with the professional development of the educator, whether parent, caregiver, specialist, or nonspecialist. The basic ingredient is to transmit a true love of music to the child, and this can be accomplished through listening together to high-quality music, attending live performances, singing soothing lullabies and folk songs, playing fun interactive music games, and making instruments together for improvisation. During the early years, the teacher's role is to keep learning entertaining while clearly expressing her love for music and demonstrating a friendship and affection toward the student. These factors surpass the need for musical proficiency on the part of the teacher, building positive relationships, classroom management, lesson planning, and assessment of young children.

Early Childhood Resources for the Music Specialist

For the music specialist, teaching a young child demands knowledge of early childhood education—how to relate to the child, how to impart this vast knowledge of music to one so young, how to return to basics, and how to make it fun and understandable to the child. What looked so simple in class when peer teachers responded appropriately as adults, became more complicated with the spontaneous, unpredictable responses of the young child!

Many music educators have not had experience with teaching children so young. When unexpectedly asked to teach, they are at a loss as to how to prepare and adjust to teaching this younger age group. It is a true gift for an educator to be given the opportunity to work with the young child who is so spontaneous, enthusiastic, and willing to participate in music making. The responsibility attached to this gift is that the molding of the child's musical development and learning environment lie in the hands of the educator—a task not to be taken lightly.

An excellent introduction to the mind-set necessary to teach the very young child can be found in the many books written on the Montessori philosophy of education, which was conceived as an indirect approach to learning while presenting a comprehensive view of the child. (See a list of books by Maria Montessori at the end of this chapter.) Montessori regarded the classroom as a laboratory for observing children and testing and retesting ideas and aids to their growth. She approached education as a scientist and pursued her ideas with an open mind, always with strong respect for the child as an individual. The method is designed to develop the whole personality of the child at a natural rate of progress, and thus free the potential for self-development within a prepared environment. The Montessori curriculum does not place restraints on the student's ability and provides manual and physical activity through use of concrete and abstract experiences to help gain mastery of oneself and one's environment.

Montessori was influenced by the works of Rousseau, Pestalozzi, and Froebel and incorporated their ideologies into her own developing and expanding theories. She modified the sensory teaching materials of Itard and Seguin and produced the Montessori didactic materials (George, 1912). These materials allow the child to explore the world through various senses and develop confidence and competence while working from the simple to more complex (Havis, as cited in Hainstock, 1997).

Montessori embedded music into her approach with a variety of stimuli such as listening, singing, playing, body expression, and above all by creating special sets of materials such as the musical bells (Miller, 1999). Montessori's ultimate goal was to return the child to its true normal way of being, which she named the "normalized" child, with the qualities of spontaneous self-discipline, love of order and constructive activity, attachment to reality, and complete harmony with the entire environment (Hainstock, 1997). The core foundation of the Montessori philosophy is respect for the individuality of the child and the environment, which is becoming most crucial as education moves in a global and culturally diverse direction.

From a music perspective, the work of Edwin E. Gordon is well worth reading. Gordon is known as a researcher and theoretician and his work reflects a deeply held philosophy about the value of music in the lives of all human beings. He believes that

Music is unique to humans. Like the other arts, music is as basic as language to human development and existence. Through music a child gains insights into herself, into others, and into life itself. Perhaps most important, she is better able to develop and sustain her imagination. (Gordon, 2003, p. vii)

Currently Gordon is exploring music development with infants from one month to many months old and refining those skills in children from eighteen months to age three. Based on an extensive body of research and practical field-testing, Gor-

don created a method for teaching the ability to hear music in the mind with understanding (audiation), which is known as Music Learning Theory. It explains how we learn when we learn music and guides music teachers in establishing curricular goals that are in sync with their own teaching styles and beliefs. The primary objective is development of students' tonal and rhythm audiation. Through audiation, students are able to draw greater meaning from the music they listen to, perform, improvise, and compose.

Jump Right In, Music Play (Gordon, Bolton, Reynolds, Taggart, & Valerio, 1998) is a developmentally appropriate music series based on *A Music Learning Theory for Newborn and Young Children* (Gordon, 2003) and years of practical and experimental research. It is designed to assist teachers, parents, and caregivers of newborn and young children in the development of basic music skills such as singing, rhythm chanting, and moving, with an emphasis on individual differences between children. Suggested activities guide the child through music developmental stages with corresponding tonal or rhythm patterns. Also, movement activities are encouraged to give children the opportunity to teach themselves how to coordinate their breathing with tonal, rhythm, and movement responses (Gordon et al., 1995). Teaching is accomplished through informal guidance that is based on and responds to natural sequential activities and the responses of the child.

The primary goal of Gordon's Music Learning Theory is to treat music education in a manner similar to language learning right from birth. Through consistent exposure to and reinforcement of musical concepts, the teacher assists the child through stages of musical development that will provide him with the basic knowledge to study music at school (similar to how the parent assists the child with language development in preparation for starting school). Gordon (2003) believes that as the child matures he will learn to appreciate and participate in the making of music, thus bringing more meaning to life.

Once the educator has an understanding of early childhood characteristics and development, the next step is to observe the child and develop lesson plans based upon the learning style and personal interests of the child. The most important tool in teaching this age group is engagement through play, and with the child's own enthusiasm, motivation, and willingness to participate, the role of the educator is simply to free the potential for self-development.

Music Training for the Early Childhood Specialist

For the early childhood specialist and classroom educator, the issue becomes where to start musically. After gaining a deep knowledge of childhood development and practical experience in educating the young child, the educator is now comfortable and confident with teaching the early childhood curriculum. What then of the music component? He knows the repertoire to sing and has practiced singing in a child-appropriate range, but wonders what precisely are the musical concepts being taught, where to go from here, and what to offer when the child does not respond as expected?

It has been my experience that early childhood educators are very willing and open to using music in the preschool setting and are usually very capable in terms of basic music skills. However, despite the best of intentions, these capabilities do not necessarily extend to modeling skills or to musical repertoire. Research by Saunders and Baker (1991) shows that while most classroom teachers feel comfortable and are prepared to use singing or listening activities in the classroom, they are reluctant to integrate music with the general curriculum when expectations exceed their music ability. Classroom teachers frequently include music in the curriculum, to transition from one activity to another, to supplement other subject areas, to provide direct musical experiences, and for recreation (Kelly, 1998). Hoermann (1974) suggests that when teachers hesitate to incorporate music into the curriculum, perhaps they are unsure how to incorporate high-quality music activities with other subjects.

Bresler (1994) reported on a three-year ethnographic study, examining music instruction by elementary (nonspecialist) classroom teachers in Illinois. The results indicated that regardless of a desire by school administrators to promote music in the school curriculum, the actual implementation and follow-through were unsuccessful. Out of the thirty-nine classroom teachers interviewed and the twenty-three observed in all three schools, only two or three kindergarten teachers (who had musical training) included music regularly in their curriculum. Most of those who did not teach music said it was because they could not sing or play a musical instrument.

According to Bresler (1994), music was most often used as background music or during transition time from curricular to noncurricular activities. The students revealed that this use of music as background music actually encouraged them to ignore music—"tune it out." Teachers reported that the lack of legitimate time slots for music was a major difference between the music specialist and classroom teachers. In addition, their inability to write out explicit lesson plans for music for a substitute teacher further accounted for the lack of accountability and the tendency to simply ignore music. She also documented that in the absence of music specialists, the role of classroom teachers with musical expertise is indispensable. Bresler emphasized the importance of ensuring expertise in the teaching of music.

However, the greatest influencing factor as to whether a classroom teacher will use music in the classroom is based upon previous music experiences (Bennett, 1992). Therefore, the most important tool to effectively improve music education for general education student teachers is the inclusion of an extensive hands-on music component in the early childhood methods curriculum. A single course combining music fundamentals with methods can be expanded by dividing it into a music fundamentals course followed by a separate course in music methods. The music fundamentals course could include improvisation, creativity, and composition, while focusing on specific musical activities that student teachers are likely to incorporate in the classroom.

At a time when the demand for music teachers is rising, and the number of students in universities training to become music teachers is declining (Tarnowski & Murphy, 2003), one of the most critical challenges facing the field of music education today is the retention of qualified teachers, which places great priority on the field experiences of student teachers.

The NAEYC states that field experiences are a key component for each of their standards, at every level, for all students. The National Council for Accreditation of Teacher Education (NCATE) reiterates the need for interplay of theory, practice, research, and hands-on experience as crucial to the preparation and professional development of the student teacher. Faculty teaching music courses expose future classroom teachers to model lessons, performance skills, and basic music understanding that correspond with future needs and instructional expectations. These hands-on practical experiences take place in an environment that simulates the conditions of natural learning while providing student teachers with the opportunity for active engagement; like teaching field experiences, hands-on practice in music-making ensures an empowered, more musically confident teacher in the classroom.

Combining the Two Disciplines

The collaboration of trained music teachers and early childhood educators working together in the school would be an ideal way to provide enriched music education for our children. Alternatively, many teacher education programs claim strengths in both music teacher education and early childhood education programs. Providing teachers with the opportunity to combine both of these fields and to earn a specialized degree is another solution to teaching within the demands of twenty-first century education.

Meeting Goals of Early Childhood Music Education

It is essential to recognize that the goal of early childhood music educators is to provide experiences that will prepare the child for music learning. It is possible for every early childhood educator to accomplish this goal and use music with the young child when he involves the music specialist. While recognizing that integrated music curricula solve the immediate problem of cutbacks in support of music education, it is important to realize that classroom teachers with no training in music are not equipped to provide the high-quality musical experiences necessary for children to learn. There must be some musical training for the classroom teacher, or involvement of music specialists, in order to provide the necessary meaningful musical experiences for the child. Qualified music educators can demonstrate and teach how to incorporate music into the early childhood curriculum and be available for follow-up teacher support and assessment.

Young children learn basic skills, such as walking and talking, through their parents and caregivers. Just as a child needs considerable experience in listening to language before learning to read and write, so too is the case for music. One needs considerable experience in listening to quality music and singing in tune before learning to read and write music. Both require the child to listen to a specialist, whether it is a parent speaking her native tongue or the music specialist. Just as in language where children are exposed to words they do not necessarily understand and eventually learn to speak with a full vocabulary, so too should they be exposed to advanced musical concepts early in life (Guilmartin, 2002).

Guilmartin (2002) also addresses parental influence and suggests quick response and intervention by parents, caregiver, and educators to a child who is not speaking or walking at the appropriate developmental stages. However, few intervene when a child is not musically developed, interpreting differences as lacking talent or interest instead of realizing that these valuable skills are achievable by all children. Perhaps this is the crux of the predicament facing early childhood music education today.

The Project Zero study at Harvard University, under the codirection of Howard Gardner (1973), demonstrated that while very young children could reproduce specific pitches with considerable accuracy, intervals and melodic fragments de-

velop much later. By three years of age, children appear to have a sense of the rhythmic structure of songs and can reproduce fragments of songs. By four years of age, they attempt to reproduce whole songs, although usually without stability of key or tonality, and only at five or six years of age are specific intervals sung correctly. Guilmartin (2002) agrees and suggests that the ability to sing in tune and in rhythm is developed around the age of three to four years and that the majority of North Americans are not reaching this developmental stage until five to six years, and sadly in many cases, eight to nine years.

This scenario emphasizes the need for an improved music curriculum that gives teachers' access to further knowledge and resources, while adhering to the overall pressure for academics. Collaboration between classroom teachers and music specialists in planning and executing musical experiences can assist in providing children with the necessary experiences to learn music.

The stark differences between what Bresler describes as the teachers' perspective and the NAEYC commitment to quality education illuminates the need for teacher competency at the graduate level and perhaps a greater responsibility on the part of the colleges and universities to ensure that early childhood music education specialized degree programs are available to all future early childhood educators.

Child-Centered Education

Learning is an ongoing process that is never quite complete—it is our challenge to extend ourselves and develop in new directions. As the demographics of neighborhoods change due to immigration and other factors, classrooms are becoming much more diversified. It is our responsibility to respond positively to the diversity of the world we now inhabit and provide an emotionally safe environment for all students. It is important as educators to realize that there is more to learning than memorization of facts, or of what can be empirically measured. In an effort to help ourselves and others toward reaching human potential, it is imperative to appreciate the value of learning through experience, emotional intelligence, and creative expression.

Educating the “whole” child is a recurring theme in today's educational literature and is generally described as a “learner-centered” approach to learning. In this system of education, the uniqueness of each child is valued in all areas of development—mental, physical, emotional, and social. The child is approached with respect as an individual and encouraged to progress at her own pace.

The ideal situation for the teacher is one of observer and guide. She has the experience to objectively observe the child and the knowledge to quietly guide and encourage the child's own natural desire to explore and learn. The child is active, not the teacher. Many teachers act more as facilitators of an education curriculum rather than as guides to learning. In the child learner-centered environment it is the educator's duty to explain, guide, and direct the child to explore what he is naturally inclined to do. In doing so, the respect for the child and the sensitive period for optimum opportunities for learning are nourished.

THE CHILD-CENTERED EDUCATOR

In traditional teaching, the teacher imparts as much knowledge as possible to a quiet, passive class of children, with the expectation of silent absorption and mandatory responses from the students. This results in learning knowledge without any understanding of consequence or relevance to everyday living or individual thought. With the future global emphasis on problem solving and teamwork within a quickly changing environment, the learner-centered style of teaching provides more of the skills necessary for this ever-changing world.

In a child-centered classroom, the child is the instigator and master of his learning. He can choose his own work—a decision that is lead by his sensitive period for learning. In other words, by following his natural desire to learn, and choosing material that stimulates the particular skill being learned, the child is now at his most heightened state for learning. He is no longer distracted by outside stimuli but focused, concentrating on the task at hand, and willing to continue endlessly without interruption, until the skill is mastered. Knowledgeable in the curriculum and materials, the educator will guide, direct, and motivate the child to pursue and explore his own learning, but the child's real desire to learn comes from within if provided with the opportunity and freedom to do so.

The need for discipline dissipates when learning is initiated and propelled by the child and the educator needs only to observe and guide when necessary. The child's own natural desire to learn will become the driving force of his education,

and discipline becomes a nonissue. When a child's mind is awakened to the excitement of learning and he is absorbed in the newness of the task at hand, he is no longer distracted. At this point, there is no need for considerations regarding discipline.

Other Factors Affecting Learning

The task of the early childhood educator and the early childhood music educator are one and the same, since the goal of both is to facilitate the creative and intellectual education of the whole child. With such young children, the emphasis becomes providing a safe and creative environment with optimum opportunities for intellectual stimulation. Accomplishing this goal with the inclusion of the arts, particularly music, is a must and using a musically trained early childhood specialist is very effective. Providing preservice teachers with high-quality music education, followed by ample opportunities to practice the art of teaching music to the child, builds confidence and prepares the new teacher with skills necessary to include music during the crucial early years of teaching. With appropriate training and practice in teaching basic principles of music, the nonmusician can gain confidence in sharing this knowledge with the young child. To accomplish this goal the high-quality music instruction must be taught by trained music educators.

Following instruction, the student teacher should spend considerable time practicing the newly acquired skills. This is imperative to future confidence and competency and has been lacking in past teacher music education. Daily practice under the supervision of a qualified music educator provides the student teacher with opportunities to practice skills learned followed by feedback and evaluation. The student teacher becomes confident in his ability to impart this knowledge to the young child and can better deal musically with the unexpected responses of one so young. The student teacher also gains a resource book of songs, games, dances, concepts to be taught, personal notes taken during practice and assessment, and suggestions for further growth. This becomes a resource guide to be expanded over the years and shared with fellow teachers in the future.

What can the individual teacher do to further her musical education and share this newfound expertise with her students? For teachers, there are always benefits to self-improvement, especially in this rapidly changing environment. Teaching institutions around the world offer myriad professional development opportunities ranging from practical workshops and conferences to online courses and available research information. Teachers can use these options to further their development, improve their efficacy, and create a more meaningful teaching environment for both themselves and their students. They also become more skilled in building positive relationships, managing their classrooms, planning lessons, and assessing young children.

To lay the foundation for music without preconception opens many new possibilities for both the educator and the child. To do so, one must begin with the educator. It becomes the responsibility of all concerned to ensure the educator comes to the child with the best possible education and knowledge to successfully nurture the "whole" development of the child in presenting musical activities.

In musically educating teacher candidates, the first step is to unleash creativity—provide the skills to develop musical confidence. To do so, a considerable amount of teacher training must include music education—from the very basic knowledge of music skills to the wider understanding and appreciation of music form.

Above all, the educator should trust his own instincts while creating appropriate learning opportunities for the child and be careful of limitations placed around the child's learning and oneself. For the more experienced educators, it is important to continue to be flexible, evaluate and examine your own practices, and rethink what and how you teach.

There is a growing body of literature which highlights the importance of positive attitudes and their impact on children's learning. The two strongest influences on the success of a young child's musical education are high levels of parental support and the personality characteristics of teachers (Evans & Tribble, 1986). These are key factors in initiating and sustaining the young child's interest in music. Research by Moore, Burland, and Davidson (2003) suggests that the child's development is influenced by his environment, which includes parental support, teacher personalities, and peer interactions. Keeping this in mind, the teacher's influence on the development of the child is of extreme importance.

Research evidence suggests that teachers' sense of efficacy has been related to student achievement and motivation outcomes (Ross, 1992) and to the teachers' actions in the classroom, such as the goals they set, their level of aspiration, and the effort invested in teaching. Teachers with a strong sense of efficacy are usually more open to new ideas and more willing to explore new methods to assist in the needs of their students (Guskey, 1988). They are also less critical of student errors (Ashton & Webb, 1986), will work longer with struggling students (Gibson & Dembo, 1984), and are less likely to refer difficult students to special education (Soodak & Podell, 1993).

Tschannen-Moran and Woolfolk Hoy (2002) studied the effect key resources and support for teachers had on their efficacy judgments. The results indicated that compared to novice teachers, experienced teachers reported significantly higher levels of teaching resources and support from their administration, as well as greater satisfaction with their professional performance. Therefore, support in the first years of teaching could be critical to the development of teacher efficacy (Woolfolk Hoy & Burke-Spero, 2003). In summary, teachers' judgment of their capability to impact student outcomes has been demonstrated to effect teacher behavior, student attitudes, and student achievement.

Mozart and the Young Mind

Mozart and the Young Mind is a music-enriched learning program. Learning is an ongoing process that is never quite complete—it is our challenge to extend ourselves and develop in new directions. In an effort to help ourselves and others toward reaching human potential, it is imperative to appreciate the value of learning through musical experience, emotional intelligence, and creative expression. What is the potential for the child when education includes an enriched music curriculum? We now have the answer! The research study I conducted through the University of Windsor, with 200 students who attend Montessori, examined the differences in math scores between students who received traditional Montessori instruction and those who received music-enriched Montessori instruction. The core question was: Is the ability to learn “anything” enhanced when music, rhythm, and movement are added and the child is engaged?

All schools in the study were established Montessori programs that met recognized affiliation standards, and the researcher was an experienced Montessori teacher and music specialist. The children in the study were divided into two groups, experimental and control. The experimental treatment was an in-house music-enriched program designed from appropriate early childhood educational perspectives and techniques. The program was sequenced to teach concepts of pitch, dynamics, duration, timbre, and form, as well as skills in moving, playing, listening, singing, and organizing sound. Children participated in three half-hour sessions weekly. The comparison group received traditional Montessori instruction during this period.

Based on the norms established for preschool children (Ginsburg & Baroody, 2003), the scores of the children who received the music-enriched instruction were in the ninetieth to ninety-ninth percentiles, indicating their mathematics achievement was substantially above the anticipated norms. Further findings indicated that when compared by age, the three-year-old children in the music-enriched group had higher scores than either the four-year-old or five-year-old children in the same group. These findings indicate that three-year-old students had higher mathematics achievement than children in the other two age groups, which raises the question: What projected scores can be expected of these three-year-olds through the following years if that higher percentile status continues?

This study offers quantitative results that could help educators recognize the value of music-enriched instruction for the young child.

MOZART AND THE YOUNG MIND CURRICULUM

The essential idea of this curriculum emerged from the observation of children in diverse cultures in many countries, and it is based on the natural development of the child. Children learn at their own pace, and individual development grows from the understanding that engagement and cognitive development are linked. A well-defined music program integrated into the early childhood curriculum promotes:

- Knowledge of musical concepts (rhythm, steady beat, melody, and dynamics)
- Creative expression
- Sense of collaboration
- Opportunities for aesthetic expression (Bredenkamp, 1987)

HOW DOES IT WORK?

The Mozart and the Young Mind style of learning is directly compatible with early childhood philosophy of education. Music making and learning are matched to the social development of the child, with emphasis placed on development of character and integration of the “whole” personality.

Each educator will feel confident in teaching the music-enriched curriculum. The step-by-step music curriculum will return that feeling of confidence to the educator, whether musician or nonmusician. It is my intention to provide the nonmusic educator with a step-by-step series of lesson plans that are easily followed and executed in the classroom.

It begins with a hands-on teacher workshop with clear instructions for teacher follow-up between visits. Each lesson includes extension lessons that naturally progress as the child moves through the early childhood curriculum. All of the music used in these lesson plans can be heard on CDs that are sequentially arranged for each lesson plan over the standard school year. The CDs are designed to be played through the lesson as each song is sung in the correct vocal range for the young child. Each class session is approximately twenty to thirty minutes in length and is designed to provide social interaction and comfort on the part of the children; movement and gross-motor activities are followed by quieter activities, with ample opportunity to learn developmentally appropriate skills. Sessions build upon the previous session to assist the child (and teacher) to build confidence and practice in each music skill being taught.

Importance of Early Childhood Education

The quality of early childhood education can have long-term effects on a child's attitude toward further education and educational achievement (Andersson, 1989). To guarantee quality in early childhood education, methods to evaluate, describe, visualize, and improve various pedagogical processes are available (Sylva, 1994). Evidence indicates that once children's achievement patterns are established, there is a high degree of continuity from that point forward, and early attainment sets boundaries on later attainment (Belsky & MacKinnon, 1994; Entwisle, Alexander, Cadigan, & Pallas, 1986). Studies of high-quality childcare indicate that such preschool experience is related to positive functioning in the early elementary grades (Andersson, 1989; Belsky & MacKinnon, 1994) and an arts-based education curriculum has been used in countries around the world for years with overwhelming academic success (Oddleifson, 1990).

Ensuring appropriate hands-on quality music education for the future early childhood educator indicates a prioritization and commitment to the musical education of generations of students to come. The goal is to meet and exceed the challenge of giving young children the best possible preparation for the future and providing high-quality early childhood music education is an important step in reaching this goal.

Books by Maria Montessori

The Secret of Childhood by Maria Montessori (New York: Ballantine Books, 1982).

The Absorbent Mind by Maria Montessori (New York: Dell Publishing, 1967).

The Montessori Method by Maria Montessori (New York: Schocken, 1964).

The Discovery of the Child by Maria Montessori (Thiruvanniyur, Madras: Kalashetra Publications, 1948).

From Childhood to Adolescence (2nd ed.) by Maria Montessori (New York: Schocken, 1948).

Child Education: Lectures Delivered on All-India Radio (Adyar, Madras, India: Kalakshetra Publications, 1948).

Spontaneous Activity in Education (Vol. 1) by Maria Montessori (New York: Schocken, 1916).

CHAPTER 6

Appropriate Curricula

What is meant by developmentally appropriate curriculum? At no other time in one's life are intellectual and physical development moving at such a fast pace as in early childhood. Deciding what is appropriate for each child during such a rapidly changing time can become quite a challenge for the early childhood educator.

The following method of education based on Piaget's theories of child development has been used globally for many years with great success. I have chosen Montessori, one of many learner-centered approaches to learning, as a basis for further comparison. The method was designed to assist the development of the child's whole personality at a natural rate of progress, and thus promote self-development within a prepared environment. Influenced by the works of Seguin (who developed an educational treatment for children with mental deficiencies), Itard (who is known as the founder of scientific education), and Pestalozzi (who became the father of an effective new system of education), Maria Montessori incorporated their ideologies into her own developing and expanding theories. Montessori's ultimate goal was to return the child to his or her true normal way of being, which she named the "normalized" child, with the qualities of spontaneous self-discipline and harmony with the environment. It was to this end that her vast array of materials was developed (Hainstock, 1997).

Today the holistic classroom is indeed similar to a Montessori classroom, with comparable philosophies and views on education. Both methods draw and build upon what the child already knows, engaging the child—since one learns best when passion and interaction are at play—and also addressing the needs of the "whole" child. For example, learning begins with the whole, progresses through to analysis of the parts, and finishes full circle with the whole picture. To demonstrate this concept, envision a lesson introducing children to *Peter and the Wolf* by Prokofiev, a musical tale for children. First, children hear the complete performance played, followed by seeing a visual representation. This can be carried out in many ways—for example, showing students a *Peter and the Wolf* picture storybook while playing the music to engage the visual senses. Now it is time to break the music down into the individual parts and introduce each instrument. Because each character in the story is represented by an instrument playing theme music, introduce children to individual pictures of this instrument. Then show pictures of each character in the story and ask students to match each character with his instrument. This means of instruction stimulates as many of the senses as possible while teaching the child.

Children can also perform a theatrical production of the story by acting character roles, and the association with the characters reinforces instrument recognition. The children are now ready to expand upon the basic concepts, and while returning to the whole picture, discuss elements of music form such as rhythm, phrasing, and timbre, among others. The goal is to engage the child, stimulate her interest, work and build from her existing knowledge base, and provide meaning to all that is learned.

Early childhood programs would benefit from enhancing their educational philosophy with a high-quality music methodology. By expanding on the present treatment of classroom music to include daily group music and movement sessions (if possible), enhanced with weekly piano/violin lessons, such programs can provide the child with every opportunity to develop his whole being.

Keeping in mind that the goal in early childhood education is to cultivate the child's own natural desire to learn, teachers should carefully "follow the child" and encourage other educators to do likewise. It is time to embrace a music-enriched curriculum for the young mind and move in tandem with contemporary thought in both education and developmental psychology.

How Effective Is Child-Centered Learning?

The following research addresses child-centered learning in a Montessori context. Morgan's 1978 research on the effect of Montessori materials hypothesizes that certain aspects of the concept of number, as explained by Piagetian theory, can be accelerated by Montessori mathematics experiences. A second hypothesis is that Montessori children would perform better on a preschool test of arithmetic skills and concepts than children in a traditional nursery school. Children from three Montessori and three traditional nursery schools were individually given an arithmetic test. The results showed that the Montessori children were significantly superior in seriation and numeration tasks. However, without a description of the curriculum in the traditional schools, Morgan's results did not prove that the superior performance of the Montessori children was due to the Montessori curriculum alone (Boehnlein, 1998).

Montessori programs have grown considerably over the past decades, and with growth came concerns about outcomes, especially academic ones. Many Montessori schools evidence high achievement levels. Such results, though impressive, could be difficult to interpret for a variety of reasons: high socioeconomic backgrounds, parental influence, and so on. A study comparing the academic outcomes of two groups of students who graduated from high schools of the Milwaukee Public Schools during the years 1997–2001 indicated that one group had completed Kindergarten through fifth grade in a Montessori program while the other group had not attended a Montessori program. The Montessori sample (201 students) showed that five to seven years after the Montessori students had left the Montessori programs and enrolled in traditional public schools, their mathematics scores were superior to students who had not attended a Montessori school. A significant finding in this study supported the hypothesis that Montessori education had a positive long-term effect. In essence, attending a Montessori program from approximately ages three to eleven predicted significantly higher mathematics and science standardized test scores in high school. In this context, the fact that the Montessori students had significantly higher mathematics and science scores suggests a substantive impact of their Montessori experience (Morgan, 1978).

In a study conducted by Clifford and Takacs (1991), two groups were studied—graduates of the Montessori Head Start program at the Marotta Montessori School of Cleveland who had entered the Cleveland Public Schools (CPS) and their CPS peers. The comparisons showed that the former Montessori students consistently fared better in mathematics. In addition to this work, Boehnlein (1990) showed that low socioeconomic status (SES) children benefited significantly from Montessori preschool.

Other studies confirm these results. Duax (1989) studied the 1987 and 1988 graduates of MacDowell School, a Milwaukee public school Montessori program spanning students from age four to eleven. Of these students, the standardized test scores (Iowa Test of Basic Skills) of 84 percent of MacDowell graduates fell above the 50th percentile, far above national norms. Nationally, 23 percent of students scored in the “high achievement” range; of MacDowell graduates, 44.5 percent scored in that range. While 23 percent of their peers across the country scored in the “low achievement” range, only 1.2 percent of MacDowell graduates scored in that range.

Students in Montessori middle schools reported more positive motivation and experience than a matched sample of students from traditional middle schools (Rathunde & Csikszentmihalyi, 2003). Five Montessori schools from the United States participated in the study that encompassed all social class levels. Rathunde (2001) put Montessori's rich understanding of the prepared environment in tandem with contemporary thought in both educational and developmental psychology.

These studies supported the view that Montessori education at both the preschool and elementary levels benefits the child academically (Boehnlein, 1998).

Methods of Learning

Howard Gardner's work on multiple intelligences has profoundly influenced all who have read his works. He studied at Harvard University under individuals such as Erikson (psychoanalyst), Riesman (sociologist), and Bruner (cognitive psychologist) and introduced the world to his theories on how children learn. The seven types of intelligence that a person possesses (Gardner suggests most of us are strong in three types) indicate not only a person's capabilities, but also the manner or method in which he prefers to learn and develop his strengths—and also to develop his weaknesses (Gardner, 1983).

Gardner (1983) believed that intelligence is defined as one's capacity to problem solve. In keeping with his theory on multiple intelligences, he recommends that children should be provided with a broad range of stimulating experiences that

accommodate the various learning styles. Linguistic intelligence is the ability to learn and use languages. Logical-mathematical intelligence involves the capacity to analyze problems logically and carry out mathematical operations, most often associated with scientific and mathematical thinking. Musical intelligence is measured as skill in the performance and appreciation of musical patterns and the capacity to compose music. Bodily-kinesthetic intelligence is the mental ability to use one's whole body or parts of the body to solve problems, while spatial intelligence deals with the ability to recognize and use the patterns of wide space and more confined areas. Interpersonal and intrapersonal intelligences are the capacity to understand the intentions of other people, or to understand oneself.

Of these seven intelligences, the first two are ones that have been typically valued in schools; the next three are usually associated with the arts; and the final two are what Howard Gardner called “personal intelligences” (Gardner, 1999, pp. 41–43). Another form of intelligence is now gaining popularity and recognition—naturalist intelligence, which refers to the ability to draw upon the environment. Gardner claimed that these intelligences are used at the same time and together. Providing the child with a variety of experiences such as singing, playing, moving, listening, improvising, reading, writing, and composing music offers the opportunity to learn using multiple intelligences. This style of learning is directly compatible with the learner-centered classroom.

All musical experiences must be developmentally appropriate for the child; that is, they should match the child's cognitive, physical, and emotional development and reflect a safe and trusting environment for exploration and learning. An example of a developmentally inappropriate exercise is expecting a child to hop to a music beat when the child's motor development has not reached that stage and the child has not mastered the task of clapping to the music beat. Each step of this learning is mastered and secured before moving on to a more complex step. Classrooms and curriculum are designed to enhance this style of learning while offering many different ways to learn.

The initial stages of a child's musical development take place at home with the parent or caregiver. Songs aid in language development and are the first building blocks of a developmentally appropriate music curriculum. The constant interactive “babble” (singing and talking) between baby and caregiver develops in a manner very similar to language development and is improvisatory in style with tonal development mimicking the speech patterns of the caregiver.

The first step in exploration of music is the experience of silence. *Silence* is defined as the absence of sound and a motionless environment. From there, the introduction to and recognition of the least stimuli is the basic principle for training the senses to move on to reacting to external stimuli. The next step is to make a distinction between sounds, beginning with the larger sounds and greater differences and moving to the almost imperceptible sounds. The progress proceeds to different timbres of sounds, from environmental sounds to the human voice to musical instruments and then to specific tones on the musical scale.

In the busy active existence of mankind in the twenty-first century the opportunities to experience silence are indeed extremely rare. We need to consciously create moments of silence and share these moments with the child. Sitting quietly, breathing quietly, inviting the child to do likewise, and observing the sounds created by every tiny move—a sigh or moving the foot just a little for comfort—all make noise. The child becomes aware of the differences between quiet, supposed silence, and absolute silence, where nothing, absolutely nothing moves. Gradually with the settling of complete silence on the part of the child, the external environmental sounds such as the chirping bird or the ticking clock become more accentuated. To develop the senses, it is necessary to develop the ability to evaluate the smallest differences in various stimuli and continue to practice and sharpen the senses.

An important aspect of the child's learning is the inclusion of *play*, which allows for differences in abilities, development, interests, and cultures. When a child is playing, he interacts with others, and the skills learned through peer interaction are crucial to further peer relations and teamwork. Musical games through play provide many avenues for exploration and practice in the art of people skills and have the added benefit of providing practice in problem-solving skills. Of further importance, motor development and play are ideal vehicles to assist in the fine-tuning of gross and fine motor muscle groups. The use of real-life activities in the interdisciplinary curricula encourages original thinking and independent learning, while addressing the issues of values and feelings.

Foundational Music Theories

The following approaches and philosophies influence early childhood music and movement in education today and are the basis from which this music program evolved.

EURHYTHMICS (EMILE JAQUES-DALCROZE, 1865–1950)

Dalcroze Eurhythmics, which was named after the Swiss pedagogue Emile Jaques-Dalcroze, is an approach to music education based on the premise that rhythm is the primary element in music. The method consists of three parts—eurhythmics, solfège, and improvisation—and forms a program of music education that offers the opportunity to experience the wholeness and aliveness of the art (Bachmann, 1991). Dalcroze perceived that the aspects of music that make the most definite appeal to the senses are rhythm and movement, and the ears and the body are used as the natural instruments for the study of rhythmic movement. He was convinced that combining intense listening with body responses would generate and release a powerful musical force.

The solfège component of the method consists of thousands of graded and sequential exercises for the study of the theory and the practice of scales, modes, intervals, melody, harmony, modulation, counterpoint, and vocal improvisation. Through these, the student is offered guidelines for choosing phrasings, dynamics, accents, and the other elements of musical expression (Choksy, Abramson, Gillespie, & Woods, 1986). The goal of improvisation is to produce skillful ways of using movement materials (rhythm) and sound materials (pitch, scale, harmony) in imaginative, spontaneous, and personally expressive combinations to create music. Although improvisation is considered to be an important musical activity for preschoolers, few research studies have concentrated on the improvisations of the preschool child (Reinhardt, 1990).

Inner hearing is the ability to internalize feelings of movements and sounds. The principal objectives of Dalcroze instruction is to enable each student to develop the ability to express what is heard securely, effectively, and knowledgeably through movement before transferring those physical sensations into other forms of musical expression or other levels of musical knowledge (Choksy, 1999).

The Dalcroze Method is based upon the kinesthetic sense. It stimulates, develops, and refines all the capacities used when engaged in music: the senses of hearing, sight, and touch; faculties of knowing and reasoning; and the ability to improvise and provide firsthand aural and physical experience of music through rhythm and dynamic intensity (Bachmann, 1991). The development of the kinesthetic sense in learning music is at the heart of the Dalcroze work (Himes, 2004), and a main objective is to integrate the Dalcroze principles with the rhythm of life.

EDUCATION THROUGH MUSIC (MARY HELEN RICHARDS, 1934–2001)

The creation of Education Through Music (ETM) was strongly influenced by the philosophies of Kodály and the child developmental theories of Piaget. The foundation for musical thought is accomplished through participation in *song-experience-game*, in which children wait, participate, listen, think, move, time their response, learn to become interested in others, organize, strategize, predict, self-monitor, and learn compassion and empathy. This is possible because each song-experience-game provides secure and enjoyable situations in which to learn and think. The activity in the song-experience-game is based in imagination, similar to Piaget's (1951) play, yet is always accompanied by song. As the children enjoy playing the game and wish to continue, they ensure the repetition necessary for the development of their own intellect. In the game, children develop positive self-esteem and confidence.

The songs used in ETM are folk songs that have been handed down from generation to generation and were used in the art of communication in movement and in speech. The song-experience-game itself is an experience in participating in the music that motivates children to engage. Once children are familiar with the song through the game, they begin to identify the parts of the song and the relationship of the parts to the whole. This concept corresponds with Piaget's (1951) cognitive analytic processes of thought.

Through exploration of the song, the child develops the ability to solve problems that seem remote from the song-experience-games by using the tools discovered and invented there (Richards, 1978). Children play, sing, and experiment with high, low, and medium sounds. They sing songs and analyze and describe through movement and visual representation the melodic contours apparent in musical composition. Children sing and develop a repertoire of songs that helps to form the foundation of their lifelong musical education (Klinger, 1996). The children listen to, identify, perform, and create the simultaneous sounds known as harmony. This is experienced through simple melodic ostinato patterns, partner songs, and simple two-part playing and singing. They continue to explore differences in pitch, timbre, duration, intensity, and form. Children explore form through differences—by identifying same and different phrases and sections, and by identifying ABA form. This exploration of music is conducted through various means such as social, aesthetic, and historical contexts with a variety of world music materials (Richards, 1977).

When the song-experience-game is first presented to a group of children, it is presented in its wholeness (as in *Peter and the Wolf*) and consists of the kind of experiences that the child is exposed to everywhere in his daily life. In the game, these

experiences are studied, learned, practiced, and then acted out. Song-experience-games create real-life situations for children. The fun of learning each song-experience-game and the repeated practice of the song and game invite and motivate the child to learn with ease (Richards, 1978).

KINDERMUSIK

In 1960, a group of music educators in West Germany developed *Musikalische Fruherziehung*, music for young children. The program is designed to help children experience the joy of learning music before beginning formal music instruction. In the 1970s, due to growing popularity, the program was translated and adapted for American children and renamed *Kindermusik*. In a *Kindermusik* class, educators lead a group of parents and their children through various activities, using music and movement. Parents learn more about their child's unique developmental process, and the shared learning experience creates a unique bond as the child associates learning with fun and musical play. The *Kindermusik* curriculum nurtures the whole child beginning with the newborn through age 7. Every lesson moves at the child's pace, pausing to engage his interests.

Kindermusik's foundation of learning provides scientific explanations as to how *Kindermusik* enhances the natural growth systems of the young mind and body. The *Kindermusik* teaching objectives are for each student to develop the ability to express what is heard securely, effectively, and knowledgeably through movement before transferring those physical sensations into other forms of musical expression. The *Kindermusik* method claims that movement and dance activities improve coordination and balance; one-on-one parent and child interaction nurtures self-esteem; music-making and music-listening activities develop self-discipline, as well as critical and creative thinking skills (*Kindermusik Foundations of Learning*, 2001). The *Kindermusik* primary goal is to stimulate development in every part of a child's brain through music.

KODÁLY METHOD (ZOLTÁN KODÁLY, 1882–1967)

The Kodály method of music instruction evolved in the Hungarian schools under the inspiration and guidance of Kodály. The goals, philosophy, and principles were Kodály's; however, the pedagogy was not. Solfa was invented in Italy and tonic solfa came from England; rhythm syllables were the invention of Cheve in France and many of the solfa techniques employed were taken from the work of Jaques-Dalcroze; hand-singing was adapted from John Curwen's approach in England (Choksy, 1974); and the teaching process was basically Pestalozzian (Choksy, Abramson, Gillespie, & Woods, 1986). What was unique about Kodály's method was the way in which these previously separate techniques were combined into one unified approach. Kodály based it upon a sequential system of sight singing that leads into the understanding of musical notation. Kodály's basic aim was to teach children to read and write music through singing (Raebek & Wheeler, 1972).

The principal objectives of Kodály musical training are that, through singing, every student should have the opportunity to become musically literate (in the sense of being able to see a score and imagine the sounds or to hear sounds and imagine the score) and to know and love his or her own folk music heritage and the great art music of the world (Choksy, Abramson, Gillespie, & Woods, 1986). The Kodály Method involves using the instrument that is most accessible to everyone, the human voice. Singing forms the foundation for musical knowledge, artistic sensibility, and social connection (Smee, 2004). The Kodály primary goal is to produce universal musical literacy.

MUSIC LEARNING THEORY (EDWIN GORDON)

The developmentally appropriate music series *Jump Right In* is based on *A Music Learning Theory for Newborn and Young Children* (Gordon, 2003) and years of practical and experimental research. It is designed to assist teachers, parents, and caregivers of newborns and young children in the development of basic music skills, such as singing, rhythm chanting, and moving, with an emphasis on individual differences between children. Suggested activities guide the child through developmental music stages with corresponding tonal or rhythm patterns. Also, movement activities are encouraged to give children the opportunity to teach themselves how to coordinate their breathing with tonal, rhythm, and movement responses (Gordon, et al., 1998). All of this is accomplished through informal guidance that is based on and operates in consequence to the natural sequential activities and responses of the child.

The primary goal of Music Learning Theory is to approach music education as one would approach language learning right from birth. Through consistent exposure to and reinforcement of musical concepts, the child learns to move through stages of musical development that will provide him with the basic knowledge to study music at school (similar to how the parent assists the child with language development in preparation to starting school).

MUSIC FOR YOUNG CHILDREN (FRANCES BALODIS, 1949–)

Music for Young Children (MYC) was created in 1980 by education specialist Frances Balodis. Her intent was to create a comprehensive and fun beginning music program for both parent and child in a small group setting. The program uses early childhood development techniques to provide music instruction in a positive and comprehensive way. The parent and child are taught as a team while having fun together learning keyboard, singing, rhythm ear training, sight-reading, theory, history, and composing (Nye, 1983). Games and activities are used to reinforce the lesson's objectives using the child's visual, auditory, and tactile senses (Aronoff, 1979).

The principal objectives of MYC are to build a solid foundation for understanding and enjoying music; nurture team skills through keyboard playing and rhythm ensemble; develop individual expressiveness through movement; reinforce music reading and theory with group activities and colorful, hands-on materials; integrate aural and written skills; and give a sense of ownership. The MYC accents the positive while refining the young child's listening, vocal, and fine- and gross-motor skills. Musical concepts are taught at the child's learning level and emphasis is placed on accuracy of basic skills to provide a solid foundation for further musical growth (Balodis, 1995). The MYC's primary goal is to encourage children to develop their enjoyment of music, and through work and play, spend much of their time involved in the activity of making music.

ORFF-SCHULWERK (CARL ORFF, 1895–1982, AND GUNILD KEETMAN, 1904–1990)

Orff-Schulwerk was started by German composer Carl Orff and his partner Gunild Keetman. Carl Orff's approach to music is based on the premise that feelings precede intellectual understanding (Raebeck & Wheeler, 1972). The child feels the sensations long before they are verbalized as ideas. When these inward sensations and feelings begin to form meanings for the child and are then verbalized, it is time to begin and write about them. The principal objectives of the Orff teaching method are that all students should find ways to express themselves through music, both as individuals and as members of a musical community (the ensemble). The musical experience itself is the most important objective (Choksy, 1999).

Orff believed that the easiest method of teaching music is to draw out the student's inherent affinities for rhythm and melody and allow these to develop in natural ways, leading the child by her intuition from primitive to more sophisticated expression through stages parallel to western music's evolution. He accomplishes this by means of a carefully planned program, beginning with speech patterns, rhythmic movement, and two-note tunes, and then moving logically into pentatonic melody. Adult pressure and mechanical drill are discouraged. Improvisation is encouraged. Major and minor melodies are introduced as the final stage of the program. Orff designed a special group of instruments, including glockenspiels, xylophones, metallophones, drums, and other percussion instruments, to fulfill the requirements of the Schulwerk courses. (*Schulwerk* is the German term for schooling or schoolwork.) The Orff Method's primary goal is to address every aspect of musical behavior: performing, creating, listening, and analyzing, through a variety of means (Frazee & Kreuter, 1987).

SUZUKI METHOD (SHINICHI SUZUKI, 1898–1998)

Shinichi Suzuki was born in Japan, the son of the owner of the largest violin factory in the world, and taught himself to play violin by listening to recordings of classical music. Suzuki discovered a way to develop musical ability in young children comparable to the way children develop their native tongue. He believed that children could learn to play a musical instrument in the same way that they first learn language. He also believed that a child's growth depends upon how she is raised and that education begins from birth, with emphasis on a strong child-parent learning relationship. Suzuki further believed that from birth, movement is the basis of all knowledge and intellectual performance (Wood, 2004).

The Suzuki Method challenges students to find ways to express themselves through music, both as individuals and as members of a musical community; encourages the parents of each child to provide music in the earliest stages of life; em-

phasizes that a child's capacities as a scholar will rest upon the earlier development of her whole being; suggests the child first learn to listen and hear each note accurately; recommends that the relationship of the parent to the child in a learning situation be warm; points to respect as the most important element in the relationship; and gives primary importance to the musical experience and the production of beautiful sound (Suzuki & Mills, 1973).

The Suzuki method builds upon the inherent nature of the child from birth and promotes providing an ideal home environment with parental support and participation at each lesson. Music to be learned should always be played for the child beforehand and followed by repetition by the child, which is followed with praise. One's future fate, or ability in later life, is determined by training in infancy and childhood (Suzuki & Mills, 1973). The Suzuki Method's primary goal is to work together to build a new human race.

What, Then, Is a Developmentally Appropriate Music Curriculum?

The following music-teaching approach, Mozart and the Young Mind (MYM), is specific to the very young child and has been tested through research. This developmentally appropriate music curriculum is based upon an understanding of the nature of learning and development of the young child. The MYM method provides instructional guidelines for early childhood educators in curriculum, child development, and assessment, and shows how to adapt curriculum and instruction to children's individual strengths, needs, and interests. Music concepts may be introduced to the preschool child in the following sequence.

1. Beat
Beat vs. rhythm
2. Tempo
Fast vs. slow
Simple vs. duple
3. Dynamics
Loud vs. soft
5. Rhythm
Rhythm vs. beat
ta-a-a-ab—whole note, *ta-ab*—half note, *tab*—quarter note, *ti-ti*—sixteenth notes
5. Pitch
High vs. low
Solfège
Curwen hand signs
6. Harmony
Monophonic singing
Ostinato
7. Form
Phrase
Phrase form and mapping
8. Timbre
Voice
Body percussion
Nonpitched percussion
Pitched percussion
Orchestral families
9. Expressive elements
Staccato
Legato

Specific lesson plans demonstrating these concepts can be found in chapter 9 and suggested materials are listed in chapter 10.

Mozart and the Young Mind

Mozart and the Young Mind (MYM) incorporates the leading approaches and philosophies that influence early childhood music and movement in education today and is sequenced to teach concepts of pitch, dynamics, duration, timbre, and form. It accents the positive while refining the young child's listening, vocal, and fine- and gross-motor skills.

The basic concepts toward which the teacher should be working during the early years of music education are listed above from simplest and easiest to the most complex and difficult. The sequence begins with song and follows through beat, tempo, rhythm, accent, dynamics, timbre, phrasing, and form to the introduction of musical styles from around the world.

Building depth in musical understanding takes time and requires thoughtful decisions on the part of the teacher regarding which musical styles to include in the music curriculum. Music styles to include are folk songs (lullabies and chants), traditional songs (ceremonial music and dance), western art music (instrumental and choral music from the baroque, classical, and Romantic periods), western twentieth-century musical theater and film music (Broadway, movie themes, etc.), and music from worldwide locales including Africa, Asia, the Middle East, and Australia.

Teachers combine keyboard, singing, rhythm, theory, and composition in each lesson to reinforce the teaching points of the lesson. Care is taken to provide gross-motor and fine-motor activities, and the lesson is designed with the child's attention span and abilities in mind. The length of the class period is not as important as the frequency—twenty- to thirty-minute sessions twice or thrice weekly with young children is more valuable than one forty-minute session once a week (Choksy, 1999).

This music program, developed by an early childhood music specialist, was designed to provide a child-centered musical environment to facilitate development in all curriculum areas, while enabling the child to learn fundamental music skills (Harris, 2005b). The program enhances a child's ability to learn concepts required in many disciplines while cultivating the child's own natural desire to learn, and this style of learning is directly compatible with the child learner-centered philosophy of education. Music, movement, rhythm, song, and drama, approached sequentially with step-by-step activities to benefit the whole child, are the basis of this program.

Creative movement develops individual expressiveness and coordination, while music skills are refined using group activities and hands-on music materials. Composing integrates aural and written skills and gives children a sense of ownership. Lastly, use of rhythm ensemble develops coordination, beat, and inner hearing, and nurtures self-confidence and communication skills. Movement builds a solid foundation of understanding and enjoyment of music while allowing the child to explore and develop her own strengths in a variety of musical areas (Gordon, 2003). The MYM program provides a child-centered musical environment to facilitate development in all curriculum areas, while enabling the child to learn fundamental music skills (Harris, 2005b).

Mozart and the Young Mind is specifically appropriate for the younger child. Gordon (2003) compares musical development to language development and states, ". . . because audiation is to musical performance what thought is to intelligent speaking, they will be deprived of learning the art of creating and improvising music. Their musical experiences in childhood and beyond most likely will be limited to simply following the thoughts, wishes, and directions of others" (p. 109).

Gordon (2003) states that children who have not acquired this music readiness will not succeed in formal instruction in school and will make little progress in music. He suggests that rather than starting every child in formal instruction in music, it is best to allow each child time to compensate for his deficiencies before beginning formal music instruction. This can be accomplished by one-on-one time between teacher and student. The child will enjoy listening to a teacher sing and chant just as he would enjoy listening to a teacher read. Unless children can sing in tune and move their bodies with good rhythm, they are not ready to begin taking instrumental lessons.

This developmentally appropriate music curriculum for young children is flexible enough to accommodate the diverse interests and learning styles of the child. The Mozart and the Young Mind method of independent learning places the educator as facilitator and co-learner. It builds upon the widely accepted standards set forth for each age level (National Association for the Education of Young Children, 2001a), maintains respect and recognition of the individual, and is taught in a flexible manner with opportunities for creativity and exploration.

The MYM method stands alone as a comprehensive early childhood music curriculum whose very core is based on valid research (Harris, 2004). Years of working with and following young children led to its evolution as a contemporary method of successfully introducing music to young children. Let's follow the research in both education and developmental psychology and adopt a music-enriched curriculum for our youngest minds.

CHAPTER 7

Multicultural Integration

The twenty-first century brings with it opportunities for a global educational environment with an expanding array of choices. Students and teachers around the world are taking advantage of opportunities for education and teaching experiences from many countries. Despite the mixing of cultures, differences in learning styles are evident across the globe, from the eastern emphasis on the highly disciplined mastery of technical skills, to the western preference for freedom of choice, creativity, and original expression. These differences are based on profound cultural differences and centuries of tradition. However, with music as a vehicle for communication, there is more cross-cultural understanding.

Learning and socialization begins at birth and is achieved by interaction and participation in the daily practices of one's surrounding community. It is through this involvement that children learn to communicate, both verbally and emotionally. It is through observation and participation that they learn the social nuances of the surrounding culture.

With the world now changing at a faster rate than ever before, massive amounts of information are accessible, and this brings with it a change in the nature of social interactions. In the past, children learned their culture through conversations and time spent with elders, family, friends, and teachers and through participation in cultural celebrations. Much of this time is now replaced with study and social activities conducted alone in front of a computer. While it is now possible to access information on a vast array of cultures and practices through the World Wide Web, the subtle nuances of speech inflection, body language, expression, gestures, and emotion cannot be experienced through online interaction. From the beginning of time, stories of everyday life, beliefs, traditions, and cultural expression have been passed from generation to generation through music. Perhaps it is through music that all cultures may learn to come together and value the qualities of openness, empathy, and respect for self and others.

It is not enough to simply tolerate cultures different from our own, rather than adopting a more activist approach toward living for diversity. For example, in the colonized countries of Australia, Canada, and the United States, education supports preservation of culture and cultural identity and equity among differing groups. However, indigenous peoples are distinct and unique, and it is not enough to treat them as assimilated citizens. It is the value of the differences and respect that must be at the basis of education.

“Whether urbane or harsh, cultural invasion is thus always an act of violence against the persons of the invaded culture, who lose their originality . . . The invaders mould, those they invade are moulded” (Freire, 1973, p. 150). The Australian school system developed the Aboriginal Education policy in 1982 focusing mainly on the advancement of Aboriginal cultures. However, assimilating Aboriginal Australians into non-Aboriginal Australian mainstream society is not the solution (New South Wales Board of Studies, 1994). A revised system of education is to educate Australian students about Indigenous Australia, as well as appropriately educating the Aboriginal students, in the hope of integrating indigenous issues into the curriculum for all students (New South Wales Board of Studies, 1995).

The first step in this process of cultural integration begins with concentrating on cultural similarities and resolving ethnic differences by putting a human face on diversity. Our children of the twenty-first century live in a global environment that demands international communication and life skills. Music has the ability to communicate with everyone, express emotions, and share cultural traditions. For a more detailed approach and methods guide to developing solutions to diversity in classrooms and society, see Gamlin and Luther (1993).

Music Is Integral to Early Childhood Education

A well-documented program demonstrates the need for music as a basic and integral part of every young child's education—thus providing opportunities for exploring cultural diversity, creativity, and expression. Learning Through the Arts (LTTA). LTTA, developed in Canada in 1994 by the Royal Conservatory of Music, is about teaching core academics through arts-based activities—geometry through dance, social studies through visual art, French through drama, science through music, and so on. The core idea is that learning anything is enhanced when music, art, theatre, and dance are added and the child is engaged.

The LTTA program is an excellent example of successfully enriching the school curriculum with high-quality music instruction, including multicultural components, taught and demonstrated by specialists. The researchers Smithrim and Upi-tis (2001) found that LTTA students scored higher in computation and estimation and that the differences were statistically significant. In a three-year study, they used standardized tests to compare the achievement of 467 students in grade 6 from a school participating in LTTA with 281 grade 6 students from two schools that did not participate. In the study, the term “engagement” was used to describe the involvement of the sensorimotor or physical, emotional, cognitive, and social dimensions in learning. Through interviews and surveys, students, parents, teachers, artists, and principals from the LTTA schools all reported that the arts seemed to engage children in learning.

A school restructuring program called Roots & Wings at Johns Hopkins University, funded by the New American Schools Development Corporation (NASDC), is revolutionizing education in an attempt to create the schools of the twenty-first century through a pilot program in a southern Maryland elementary school. In addition to standard curriculum, Roots & Wings provides daily opportunities for students to resolve cultural diversity, work on building higher order skills to creatively solve problems, understand their own learning processes, and connect knowledge from different disciplines (Slavin, Madden, Dolan, & Wasik, 1996). The goal is to engage students in diverse activities that enable them to apply everything they learn so that they can learn the usefulness and interconnectedness of all knowledge (Burton, Horowitz, & Abeles, 1999).

These scenarios emphasize the need for a comprehensive early childhood music curriculum that assists educators with access to further knowledge and resources and assists in providing children with the necessary experiences to learn music in a multicultural environment.

The Mozart and the Young Mind (MYM) Program

The moment children enter the multicultural classroom for the first time they are struck by the vast array of materials to work with. Perhaps they are a little overwhelmed to meet new friends and apprehensive to leave their parents for the first time. The children will benefit if the educator spends considerable time introducing them to the music materials and classroom schedule. This is the time to sing, sing, and sing. Sing classroom instructions, such as to stand in a line or follow the teacher. Sing when introducing the children to each other, have children sing when learning to count, use singing whenever possible.

When singing, using a higher pitched voice is best, as some of the children will try to imitate and match pitch and a higher pitch is more appropriate for their vocal range. The vocal tone is pure and clear without pressure to alter the voice to sing loudly or whisper. The speaking voice is also important, as is establishing a starting pitch to guide the children to a starting point. This is the time to demonstrate the correct breathing and singing techniques discussed in chapter 8.

THE MUSICAL ENVIRONMENT

The classroom environment is arranged to accommodate the natural functions of childhood learning through the freedom of movement and activity. The wide array of music and movement opportunities for children supports this style of learning and provides the freedom to act in accordance with their innate musical tendencies. Initially, the teacher introduces the child to quality music from around the world and a repertoire of songs, which are used later to build musical techniques. These multicultural songs are the basis for rhythmic exercises involving motor skills.

All learning begins in the senses and builds a solid foundation for intellectual development. The child learns to recognize similarities and differences, to discriminate between similar objects, and to recognize gradations of difference in size, shape, or color of similar objects. Using the visual sense, children discriminate size, shape, and color; with the auditory sense, they discriminate intensity and pitch. Just as the child learns to recognize colors, forms, sounds, and so on, he also learns to rec-

ognize matching notes. Bells offer the rare opportunity to produce and *listen* to a single note, which is of great interest to the young child.

Through working with different sensorial musical materials, the child refines his auditory discrimination. The child that has mastered the basic musical concepts discussed thus far progresses naturally to beginning math activities, which include the development of concepts such as numeration, place value, fractions, and the basic operations of addition, subtraction, multiplication, and division. The acquisition of mathematical principles develops logically from concrete to abstract and simple to complex.

The research upon which *Mozart and the Young Mind* is based studied the effect of music on the mathematics scores of young students. The results predict a 99 percentile score for all students receiving music enrichment. The research details the obvious similarities between music and mathematics and the hypothesized logarithmic functioning, which is similar to both (Harris, 2005a). Number songs are a gentle introduction to adding numbers or subtracting numbers while using the children's physical movement as a visual lesson. Other exercises demonstrate how the teacher can easily introduce fractions through the association to music notes within a measure of music.

Just as the child's sensitive period for learning language is from ages two to five, the critical period for learning music is from three to five (Hodges, 1996). The voice learns the different pitches of sound, just as it adapts to pronunciation in spoken language. Development of language consists primarily of extending the child's speaking ability to include written language. Written language development proceeds generally through the stages of (a) listening skills/vocabulary, (b) writing, (c) prereading (word pronouncing and composing), and (d) actual reading (Kolb, 1996).

Teachers can prepare students for language through a rich diet of songs, stories, and poems from many cultures, and can incorporate music into the language curriculum by simply beginning with the repertoire of songs in chapter 8 and appendix A. Songs can be sung in different languages, rhyme songs can be used to emphasize phonetic endings to words, and vocabulary can be expanded by singing theme songs and performing story telling through song.

CULTURAL IMMERSION THROUGH THE MYM PROGRAM

The cultural area is where the sky is truly the limit in regard to music. There are countless examples. Music is a wonderful avenue to introduce cultures from around the world. The many recordings available depicting the traditional music of each culture are readily available for teachers to add to their collection. Also, musical recordings of the various instruments from countries around the world provide children with an auditory and visual representation of culture.

It is important to include an equitable balance of multicultural materials in the classroom to ensure that each child's heritage is represented and all children are exposed to the heritage of other cultures. Today the holistic classroom method draws and builds upon what the child already knows, engaging the child—since one learns best when passion and interaction are at play—and also addressing the needs of the whole child. Learning begins with the “whole,” progresses through to analysis of the parts, and finishes full circle with the “whole” picture (Harris, 2007).

MUSIC FROM AROUND THE WORLD IN THE MYM PROGRAM

The musical environment contains objects that arouse feelings and understanding of music. Through the systematic introduction of quality music, the children become accustomed to appreciating good music from many countries. Make these recordings readily available in a music center in the classroom and include music styles from around the world. Along with these high-quality recordings, make available books that discuss the lives of composers, picture books of instruments, and examples of the role music plays in cultural celebrations around the world in a classroom music library.

Mozart and the Young Mind incorporates the use of multicultural music, song, dance, movement, and instruments, and these multicultural music concepts are taught at the child's learning level. Emphasis is placed on accuracy of basic skills to provide a solid foundation for further musical growth. This music program is designed to provide a child-centered musical environment to facilitate development in all curriculum areas, while enabling the child to learn fundamental music skills.

Building depth in musical understanding takes time and requires thoughtful decisions on the part of the teacher regarding which musical styles to include in the music curriculum. Recommended music styles include folk songs (lullabies and chants), traditional songs (ceremonial music and dance), western art music (instrumental and choral music from the baroque, classical, and romantic periods), western twentieth-century musical theater and film music (Broadway, movie themes, etc.), and music from regions around the world including Africa, Asia, the Middle East, and Australia.

Australia

At the north of Australia live the people of the Arnhem Land Aboriginal Reserve, and these people are among the oldest cultures still in existence. Their lifestyle was based on survival and the basic necessities of life. Their music is meaningful to their culture. The main instruments used in the Arnhem Land are the drone pipe—or didgeridoo, the log drum, and the bullroarer.

- *Didgeridoo*—This is made from a hollowed-out eucalyptus branch and is blown into producing a constant sound.
- *Rhythm sticks*—Australian Aboriginal rhythm sticks are among the oldest and simplest of all rhythm instruments. Sticks picked up from the ground are beaten against each other or the ground, usually to accompany singing.
- *Bull roarer*—This is an oblong wooden board that is spun overhead on the end of a string.

Papua New Guinea

Papua New Guinea is the least-explored island in the world and is located just north of eastern Australia. The music of this island is based on call-and-response songs sung in unison or in octaves. This vocal music is usually accompanied by hour-glass-shaped single-headed drums that range from two to six feet in length. Once again, music pervades all aspects of life.

- *Jew's harp*—This is made from a short piece of bamboo and is very similar to its metal counterpart in Europe and the United States. Played with the mouth, this small instrument generates sound with a vibrating air column. Using the jaw and mouth as a resonator greatly increases the instrument's volume.
- *Papua New Guinea long drum*—usually has a handle carved from the same piece of wood as the drum's body. Many are decorated. Tiny balls of glue from spiders' webs are placed on the drumhead to improve its tone.
- *Oceanic nose flute*—is often carved from a soft stone similar to soapstone. If a gourd is used, the gourd's neck is cut open and narrowed for use as the nose hole, and side finger holes are drilled in the gourd's bowl to vary the pitch.
- *Valiha*—is a bamboo tube zither from Madagascar and popular in Papua New Guinea. It is played by plucking the strings, which may be made of metal or bamboo skin.

Southeast Asia

In Southeast Asia, music is often played in temples and homes for festivals, ceremonies, and processions. Many of the instruments, including large harps, are double reed pipes in which one pipe sounds a drone continuous note while the other plays the tune. Modern knowledge of these instruments comes from paintings and from discoveries in tombs.

- *Gabbang from Borneo*—is a traditional xylophone with eight wooden keys. This beautiful instrument is carved from *paku-dita* wood and is often part of a musical ensemble played during festivities.
- *Gong from Borneo*—came from the Dyak people. It is a small gong suspended from a simple frame and struck with a padded beater. It is thought to ward off storms.
- *Saung from Burma*—also known as the Burma Harp, it is a traditional instrument of Burma (Myanmar). This very ancient harp tradition is still alive today.
- *Stamping sticks of Fiji*—are among the oldest and simplest of all rhythm instruments. Two hollow tubes are beaten on the ground, usually to accompany dancing.
- *P'ip'a*—is a long-necked lute used in art and folk traditions, sometimes called tanbur (or tambur).
- *Pi from Thailand*—is the generic term for any of a variety of quadruple reed oboes used in the traditional music of Thailand.
- *Saron from Indonesia*—typically consists of seven bronze bars placed on top of a resonating frame. It is usually about eight inches (20 cm) high and is played on the floor by a seated performer. The sarons are struck with a mallet (*tabuh*) in the right hand. The left hand, meanwhile, is used to dampen the previous note by grasping the bar, in order to prevent a muddy sound.
- *Bonang from Java*—consists of a collection of small gongs positioned horizontally on strings in a wooden frame, either one or two rows wide. Each is tuned to a specific pitch in the appropriate scale and is typically hit with a padded stick (*tabuh*).
- *Gender from Bali*—consists of ten to fourteen tuned metal bars suspended over a tuned resonator of bamboo or metal. The bars are tapped with a mallet made of wooden disks (as in Bali) or a padded wooden disk (in Java). Each bar is a note of a different pitch, often extending a little more than two octaves.

India

India has influences from Buddhism, Hinduism, and Islam, which are all reflected in the various musics of its culture. The art of Indian music has been called guided improvisation; that is, scriptures were passed down through Vedic hymns and, according to traditional views, these hymns were divinely revealed rather than composed. The Vedic hymns were consolidated in the second millennium BC and are among the oldest vocal traditions in the world. Many of the famous folk epics of this area have been recovered through long epic narratives (the unaccompanied songs of storytellers).

- *Tabla drum*—is a popular Indian percussion instrument used in classical, popular, and religious music of the Indian subcontinent and is often used to accompany the sitar. It consists of one cylinder-shaped drum and one cone-shaped drum, each tuned to a different pitch.
- *Tiktiri*—a double clarinet made of two bamboo tubes fitted into a gourd that acts as both blowpipe and wind chamber. This instrument is often seen with snake charmers.
- *Veena*—a plucked stringed instrument and member of the lute family. The design of the veena has evolved over the years, probably from the form seen in South Indian medieval paintings and temple sculpture—a stringed instrument with two gourd resonators connected by a central shaft, possibly of bamboo, and held diagonally from lap to shoulder.
- *Sitar*—derived from the long-necked lutes of western Asia and from the veena family of instruments. It consists of sympathetic strings, a long hollow neck, and a gourd resonating chamber, which produce a very rich sound with complex harmonic resonance.
- *Sarinda*—a three-stringed folk instrument similar to a lute that is played with a bow. It is played while a person sits on the ground and holds it vertically.

China

The Chinese civilization developed a writing system that provides a documented and continuous tradition and a vast written legacy of information about the Chinese civilization over an amazing period of three to four thousand years. Opera and solo instrumental music, along with Confucian rituals, are occasionally performed in modern cultures. However, popular and film music have now entered the Chinese mainstream music culture. (See the resources in chapter 10 for a list of websites on Chinese music.) Western music was introduced in China after the fall of the last Chinese dynasty in 1911, when a republic was declared.

- *Chinese goblet drum*—is carried by a strap on one shoulder and struck with the right hand. Often used for festivals, it is decorated with colored feathers and ribbons. Its name is derived from its distinctive shape and it can be found all over Asia.
- *Ch'in* (or table harp)—is the modern name for a plucked, seven-string instrument of the zither family. It dates from ancient times and the Chinese sometimes refer to it as “the father of Chinese music” or “the instrument of the sages.”
- *QinQin*—is a plucked lute originally designed with a wooden body, a slender fretted neck, and three strings. Its body can be either round, hexagonal (with rounded sides), or octagonal. Often, only two strings are used, as in certain regional silk-and-bamboo ensembles. In recent years, the instrument has been redesigned to have a skin resonator and up to four strings.
- *Sheng*—is a mouth-blown reed instrument consisting essentially of vertical pipes. Traditionally, the *sheng* has been used as an accompaniment instrument for solo or duet performances, in Chinese opera, and in small ensembles. Its warm mellow sound expresses lyrical melodies well, while its ability to play chords makes it a highly prized accompaniment instrument.

Japan

Japan has many folk theatricals that are performed during festivals. Folk songs are sung in a high-pitched voice, and dances are accompanied by hand clapping or barrel drums played with sticks. The early Japanese narrative and theatrical traditions used instruments such as drums, bamboo flutes, and brass gongs. After the sixteenth century, the lute was introduced. The modernization of Japan—which began in 1868—introduced western music in the classrooms. A music teachers' college opened and new curricula were developed and implemented in the schools. It was not until the 1950s that Japanese music was returned to the school curriculum.

- *Shamisen*—is a three-stringed instrument similar in length to a guitar, but its neck is much slimmer and without frets. Its rounded drum-like rectangular body, known as the *dō*, is covered front and back with skin similar to a banjo, which amplifies the sound of the strings.

- *Koto*—is a traditional Japanese stringed instrument derived from the Chinese zither. The koto is the national instrument of Japan, about 108 centimeters (71 in.) long, with thirteen strings strung over thirteen movable bridges along the length of the instrument. Players can adjust the string pitches by moving the bridges before playing and use three finger picks (on thumb, forefinger, and middle finger) to pluck the strings.
- *Shakuhachi*—is made of bamboo, has a very wide bore, and is lacquered inside. It is an end-blown flute.
- *Biwa*—is a Japanese short-necked, fretted lute and a close variant of the Chinese pipa. The biwa is an instrument chosen for eloquence, poetry, and education in Japan.
- *Taiko*—is a stick percussion instrument usually struck with sticks called “bachi.” Both ends of the drum body have heads making a sealed resonating cavity. It has a high amount of tension on the drumheads, with a correspondingly high pitch relative to body size.
- *Tsuzumi*—is a drum with a wooden body shaped like an hourglass and two drumheads with cords that can be squeezed or released to increase or decrease the tension of the heads, thus altering the pitch. The tsuzumi is the only Japanese drum struck with the hands and it is played while being suspended over the shoulder by its cords. The tsuzumi can produce a range of sounds depending on how hard or soft the player strikes the head with his hands.

Africa and the Middle East

The vastness of Africa offers a variety of cultural music and ties to other cultural influences from Islam, Christianity, and Judaism and the ancient cultures of Egypt, Persia, Indonesia, and Morocco. It is from this region that we can find evidence of music that came from the very cradle of civilization. Excavations of civilizations dating back to 2500 BC provide incredible evidence of the importance of music in Mesopotamian and Babylonian societies. It is the unusual polyethnic quality of Africa that has created such a striking musical mixture.

- *Nigerian drum*—double-headed, laced, and pegged, it is carried by a strap over one shoulder. It is struck with a curved beater.
- *Kenyan obokano*—a large bowl-shaped lyre that is sometimes called the double bass of East Africa. It has eight tuned strings that are played with the fingers. Smaller lyres are also played.
- *Libyan imzad*—a “spike fiddle” played with a very curved short bow. Although it is a simple instrument, it can produce a variety of sounds. It is thought to have originated in Persia.
- *Syrian rebab*—a primitive “spike fiddle” found only in the Middle East and Africa. It has a single string but can still produce a variety of tones and pitches.
- *Tonbak*—a goblet drum from Persia considered the principal percussion instrument of Persian music. Goblet drums are played with a much lighter touch and quite different strokes (sometimes including rolls or quick rhythms articulated with the fingertips) than hand drums found in Africa. It is played while held under one arm or between the knees while seated. It produces a resonant, low sound while played lightly with the fingertips and palm.
- *Tambur*—a long-necked lute that dates back to the third millennium.
- *Georgian zither*—a popular folk instrument used to accompany songs and dances. Its ancestor is the Turkish Qanun, and there are many similar instruments played throughout Europe.
- *Tar*—is a long-necked lute found in Iran and Georgia played with a small brass plectrum. The body is a double-bowl shape carved from wood, with a thin membrane of stretched skin covering the top. Its long flat fingerboard has twenty-five to twenty-eight adjustable gut frets and three double courses of strings. It has a range of about two and a half octaves.
- *Harp*—Archaeologists have uncovered abundant evidence supporting the existence of harps in ancient times. From the burial chambers of the Sumerians to the halls of the Egyptian pharaohs, the harp has a long and colorful history. The smaller, more portable harp of the nomadic Asian tribes bears a close resemblance to the modern Celtic or Gaelic harp.

The Americas

The new world, regardless of its youth, has native instruments with varied origins.

- *North American Native drum*—a double-headed drum with two skins laced together over a rigid cylinder. Larger drums were laid on their side and beaten by several drummers. Used in religious dances and chants.

- *American banjo*—a stringed instrument that can be strummed or plucked with fingers or a plectrum. It has its origins in the long-necked lutes brought from Africa by slaves.
- *Brazilian urua*—originated with the Camayura Indians. It is a huge double clarinet made of two bamboo tubes with inset reeds. In ceremonies the longer pipe is called male, the shorter pipe, female.
- *Caribbean steel drums*—made in a variety of sizes and pitches from empty metal oil drums that are heated, hammered, and cut to produce a tuned instrument. Developed in the 1940s, they have a very distinctive sound and are popular in street parades and for accompanying dancing and singing.
- *Peruvian panpipes*—sets of graduated flutes that are joined together in a raft shape. Sound is produced by blowing across the top of the holes. The tubes have no finger holes. Instruments like this have been played for more than two thousand years throughout the world.
- *Ecuadorian rondador*—a type of panpipe. Groups of folk musicians play rondadores of different sizes and pitches for holidays and festivals.

Twenty-First Century Percussion Instruments

Percussion instruments are the most suitable instruments for young children and should be systematically introduced through live performance whenever possible. Parents who are familiar with percussion instruments played in their homeland often make the best demonstrators. When presenting these instruments, do so one at a time in order to provide the children with the opportunity to become familiar with the name, unique timbre, and correct playing technique of each instrument.

“The Lion and the Mouse” and other creative stories (sample resources are in chapter 10) are excellent tools to invite the children’s participation in playing percussion instruments. When using stories and percussion instruments with a group of children, use a song or story familiar to the children, and ensure that each child is confident with the correct playing technique for the instruments being used. Establish and practice hand signs for starting and stopping, loud and soft, legato (smooth) and staccato (detached) before beginning a class. Reassure children that the instruments will be systematically passed around the class during the lesson and everyone will get a turn on each.

The primary goal is not the performance of the music so much as creating an enjoyable learning experience for the children. The music sessions should be creative and fun, with an emphasis on improvisation and freedom to explore. Each child should feel safe and secure in knowing that his suggestions and creative expressions are welcomed and appreciated by everyone. Once again, it is the educator who provides the child with every opportunity for creative expression and thought.

When teaching children to use instruments, it is important to match the instrument to the size of the child’s hand. For example, small egg-shaped shakers are ideal for a small child’s palm, and music bells are easily carried with both hands and struck by a mallet for one so young.

Using body percussion can be filled with fun and exploration as children improvise with various body actions such as clapping, snapping, and stamping. Children will attempt to imitate the teacher’s clapping and will eventually learn to clap in time with the teacher’s tempo. Further exploration leads to different tone colors as various parts of the body are used.

Nonpitched instruments are made of different materials such as metal, wood and skin. For example, finger cymbals and sleigh bells are metal; rhythm sticks, maracas, and woodblocks are made of wood; and bongo drums, hand drums, and others are made of skin. Such instruments from around the world are excellent tools for introducing cultural themes. With young children, each instrument should be introduced individually, and timbre recognition and names of instruments discussed.

MAKING MUSICAL INSTRUMENTS

Early childhood teachers are familiar with enhancing the classroom with handmade materials and the music area is no exception. Here are suggestions for percussion and other instruments that are easy to assemble even for very young children (ages three to five). They are bright, colorful, and fun to play. The materials are readily accessible and, with a little imagination, offer another avenue for creative expression in the areas of design, construction, and musical improvisation. The materials are presented to the children at the discretion of the teacher in a manner similar to any other material-making activity. As with all such activities, take care to ensure the child’s safety while using foreign materials, scissors, small beads, and so on. The main purpose of these activities is to help the child develop his ability to concentrate and to coordinate his musical movements.

There are also many books available describing how to make musical instruments and I have found that children really enjoy the bright colors and wide array of creative ideas offered. The many resources available for age-appropriate musical instruments to make in class (see chapter 10) provide lesson plans, simple instructions, musical suggestions, and colored diagrams that are helpful as a visual tool.

Before making music materials, be sure to:

1. Assemble all necessary materials and equipment.
2. Put on an apron to protect clothes and wash hands.
3. Cover worktable with newspaper.
4. Choose an appropriate area to place instruments when finished, such as a windowsill for drying instruments.
5. Have supplies for cleaning up paintbrushes, etc., on hand.
6. Ensure appropriate teacher supervision.

I would suggest beginning with the following instruments, listed by degree of difficulty.

Shakers

Child-sized instruments used for shaking are easy to make and the materials are readily available in any classroom.

Equipment: Pinking shears, scissors, jar of water, paintbrush, saucer.

Containers: Use any of the following—drink cans, clear plastic drinking cups, small tins, and yogurt containers.

Fillings: Small wooden beads, paper clips, buttons, brown sugar, lentils, gravel, various sizes of pasta, and rice.

For decorating: Colored paper, tape, pencils, markers, ribbon, cloth, etc.

Choose a container to work with that has been washed in warm water and is completely dry. Decorate the container with the preferred materials. Select the filling based upon various sounds they'll make. Brown sugar produces a softer sound than gravel, and the wood sound made by the beads contrasts with the metal sound made by the paper clips. Place a handful of the filling inside the container and secure opening with tape. Show the child how to hold the instrument and listen together to the sound produced.

Bells

Musical bells produce an exquisitely pure sound that often mesmerizes the young child. Bells made of various materials can produce interesting sounds. For example, the garden-variety terracotta pot made from clay produces a different sound from that of metal bells. Children take great delight in making these bells.

Equipment: Jar of water, paintbrush, saucer, scissors

Containers: Flowerpots can be purchased at any flower shop or craft shop and come in varying sizes. The smallest mini-pot is ideal for the small child's hand. The smaller the pot, the smaller and higher the sound produced, and the larger the pot the bigger and lower the sound. This is typical of all instruments—consider the flute from the orchestra and the French horn, or the violin and the double bass.

Fillers: Large beads, cord

For decorating: Colorful paint and/or tape

Paint colorful patterns on the flowerpots and leave them to dry (remember that they will be upside down when used as a bell). Cut a thick piece of cord about 30 inches (75 cm) long and tie a knot at one end. Thread a bead on the cord right to the end and thread through flowerpot. Tie one final knot to secure cord inside the bell.

Drums

Drums are made from many materials that all produce different sounds. I have chosen the most accessible and contrasting drums to make, one of tin and the other of plastic.

Equipment: Scissors and pencil

Containers: Plastic flowerpots, or a round cake or biscuit tin, large balloons

For decorating: Colored paper, tape, ribbon, and cord

To make the tin drum, decorate the side of the tin with the colored paper and tape designs. Cut off the end of a balloon and stretch the balloon over the open tin. Tape the balloon to the sides of the tin and show the child how to gently beat the drum.

To make the plastic tom-tom drum, begin by turning the pot upside down on fabric and tracing around the pot. Cut out the circle approximately 2 cm wider than drawn. Pull the fabric tightly over the open end of the flowerpot and tape. Show children how to beat the drum.

Rain stick

A rain stick simulates the sounds of nature.

Equipment: Scissors and glue

Containers: Two long cardboard tubes, about 4 cm in diameter

Fillers: Beads, rice, pasta, gravel, sand

For decorating: Colored paper, colored plastic tape, and a didgeridoo, which simulates the sound of running water.

Stick the ends of the two cardboard tubes tightly together with tape, to make one long tube. Tape over one end of tube, cover all the tube with colored paper and decorate. Fill tube with three handfuls of chosen filler and seal off the open end of tube with tape. Flip the tube over like an egg timer and listen to the beads running along the inside of the tube. Now flip back. The children are entranced as they listen to these sounds.

Didgeridoo

Equipment: Scissors and glue

Containers: Two long cardboard tubes, about 4 cm in diameter

Fillers: Beads, rice, pasta, gravel, sand

For decorating: Colored paper, colored plastic tape

Stick the ends of the two cardboard tubes tightly together with tape, and make one long tube. Tape over one end of tube, cover all the tube with colored paper and decorate. Have children blow into the tube.

Box Harp

Create a construction similar to the guitar by stretching elastic bands around a cardboard box and plucking the bands.

Equipment: Scissors, pencil, ruler, knife

Containers: Small boxes and their lids, elastic bands of different thickness, lengths, and colors

For decorating: Colored paper and glue, colored pencils, colored tape

Cover the boxes and their lids with colored paper. Line the bottom of each box with paper of a different color. Draw a shape on the box lid and cut out with knife. Decorate the sides of the box and lid with musical shapes. Place elastic bands of different thickness across the box with a pencil underneath to raise the bands. The thickest band will play the lowest sound when plucked, and the thinnest band the highest note.

Xylophone Bottles

Tap these colorful water bottles with a beater and hear the different pitches.

Equipment: Jar of water, paintbrush, felt pen, saucer

Containers: Identical glass bottles

Fillers: Water at different levels

For decorating: Colored paint and colored tape

Fill the bottles with water to different levels—the more water added, the higher the pitch. Mark the water levels on the bottles with the felt pen. Empty the bottles and draw and decorate the bottles from the bottom up to the water level line. Put a drop of coloring in each bottle and fill them with water to the painted lines. Strike bottles and listen to the sound ascending as the water levels rise.

Beaters

In addition to using the hand, there are endless possibilities for beaters. Experiment by using straws, sticks, wooden skewers, and chopsticks and placing a cork, sponge, piece of felt or cloth, small metal nut, or bead on one end. The stronger materials produce hard beaters and work best on bottles, whereas the lighter and softer beaters are best for drums.

USING CEREMONIES

Ceremonies are another wonderful avenue for demonstrating the uses of music through cultures around the world. In a ceremony, movement is crucial. One may have to move in a slow, controlled manner, or perhaps one needs to stand totally still and quiet. What about appearance? Each culture uses its own ceremonial dress. Discuss with the children the differences between everyday behavior and ceremonial behavior. The children can choose a partner and create a brief scene in which both partners move ceremonially. Many versions of this role-playing are possible and well enjoyed by the children.

What buildings are used for ceremonial use—Greek temple, mosque, cathedral? Most ceremonial buildings are public rather than private, and probably contain wide-open spaces instead of individual private rooms. They are usually built to hold large amounts of people and to impress. Think about the kind of music needed to accompany a procession into these magnificent buildings and have the children compose this music—some children can play the processional music, while the others proceed slowly in ceremonial style.

OTHER CULTURAL PROJECTS

Further cultural projects include the legends of the gods of the ancient world, such as Shamash, Babylon's sun god of justice, and ancient China's "August personage of Jade." Discuss the legends with the class, turn the legend into a ceremony, and divide the class into role-playing groups. The children can help compose some music, decide on movements for the ceremony, practice the movements with the music, and finally perform the grand ceremony to their movement and music—bravo!

Other areas of the cultural curriculum where music is easily incorporated are the seasons (spring, summer, fall, and winter) and the elements (earth, air, fire, and water). The ancient Greeks believed that all things were composed of four elements, and medieval scientists thought that the balance of these elements in our physical make-up determined our temperament. Explain to the class how scientists today know that there are more than seventy elements, and that earth, air, fire, and water are not among them. This would surely lead to much discussion and exploration.

CLASSROOM AS SPRINGBOARD TO DISCOVERY

In the classroom, the child learns to feel safe and secure; only then is he free to explore all the wonders of his self and surrounding world. When the child learns to trust, he can then cultivate his own natural desire to learn, which will provide him with the skills for the future. *Mozart and the Young Mind* is based on respect for the child, respect for the environment, and freedom of choice within the prepared environment. It teaches the necessary skills for the future, creative thinking, problem solving, risk taking, teamwork, communication, creativity, and individual thought. The mission is to develop the "whole child" through leadership in music education. *Mozart and the Young Mind* enhances a child's ability to learn

concepts required in many disciplines and this style of learning is directly compatible with the early childhood philosophy of education.

Enhancing the present treatment of classroom music to include daily exposure to the differences and similarities of all world cultures provides the young child with every opportunity to develop his whole being in an embracing and open-minded manner, while keeping in mind that the goal in early childhood education is to cultivate the child's own natural desire to learn (Harris, 2007).

CHAPTER 8

A Year's Music Curriculum

I believe in the accessibility of music to all children and embody music in my teaching with a variety of stimuli. A range of activities that are possible for the young child through movement and music is described in this chapter with detailed lesson plans. It is my intention to provide the music and nonmusic educator with a step-by-step series of lesson plans that are easily followed and executed in the classroom. Each lesson includes extension activities that naturally flow from the primary lesson as the child moves through the curriculum. All of the music used in these lesson plans is listed alphabetically by title in the resource section of chapter 10 and I suggest becoming familiar with these songs prior to the school year. The lesson plans are arranged sequentially over the standard school year, and the order of the songs in each lesson plan is specific. The songs are designed to be sung in the vocal range of one octave above middle C, which is the correct vocal range for young children. Each class session is approximately 20–30 minutes in length and designed to provide social interaction and comfort for the children; movement and gross-motor activities are followed by quieter activities, with ample opportunity to learn developmentally appropriate skills. Each class session builds upon the previous session to help the child (and teacher) build confidence and to practice each music skill being taught. For more detailed information on techniques and activities, see chapter 9.

Music has been in the hearts of mankind since the beginning of time with the power to soothe, heal, and communicate profound emotions. It is the rhythm of life, with the power to uplift whole nations. Take a deep breath, jump right in, and trust that music will sustain you as you share this musical gift of life with the young child.

Basic Concepts

The basic concepts of music for the early years of music education are listed here from simplest and easiest to the most complex and difficult. Research has shown this is most beneficial for young children acquiring musical skills.

1. Silence
2. Song
3. Beat
4. Tempo: fast-slow
5. Rhythm: long-short
6. Accent
7. Dynamics: loud-soft
8. Timbre
9. Phrasing
10. Form
11. Mapping
12. Creativity and Improvisation
13. Composition
14. Notation

The first step in exploration of music is the experience of silence. Silence is defined as the absence of sound and a motionless environment. Moving from there to the introduction to and recognition of the least stimuli is the basic principle for training the senses to react to external stimuli. The next step is to make a distinction between sounds, beginning with the larger sounds and greater differences through to the almost imperceptible sounds. The progression proceeds to the different timbres of sounds from environmental sounds—such as birds singing, clocks ticking, leaves rustling—to the human voice, to musical instruments, and then to distinguishing specific tones on the musical scale.

In the busy world of today, the opportunities to experience silence are indeed extremely rare. We need to consciously create moments of silence and share these moments with the children: sitting quietly, breathing quietly, inviting children to do likewise, and observing the sounds created by every tiny move. A sigh or moving the foot just a little for comfort both make noise. Children become aware of the differences between quiet, supposed silence, and absolute silence where nothing, absolutely nothing moves. Gradually with the settling of complete silence on the part of the child, the external environmental sounds such as the chirping bird or the ticking clock become more accentuated. To develop one's senses, it is necessary to develop the ability to evaluate the smallest differences in various stimuli and continue to practice and sharpen the senses.

Teaching Techniques

Let us now begin with song and voice, the most accessible and natural of all instruments. A repertoire of songs built over time provides an excellent source of music to work with. Children's songs should be within the comfortable singing range of the child within one octave above middle C (Phillips, 1992) and be appropriate for singing, moving, playing, listening, etc. From a physiological perspective, children's voices are not ready to handle difficult melodies, and professional musicians recommend songs that fit into a six-note or seven-note range (Choksy, Abramson, Gillespie, & Woods, 1986). Songs like "Here We Are Together," "Hot Cross Buns," "Open, Shut Them," and "Twinkle Twinkle Little Star," to name a few, should certainly be included in the repertoire.

Teachers should model a good singer's posture, with upper body held high as if standing, and maintain relaxed neck and jaw muscles to avoid tension in the singing voice. Sitting helps the very young child to focus on body posture and breathing without the distractions of body movement. The teacher may choose, at a later stage, to demonstrate the singer's posture with all standing. Use of the diaphragm for deep breathing is necessary for breath support and vocal production. The teacher should demonstrate this breathing technique to the children (the upper chest and shoulders remain still while inhaling, and the abdominal and lower rib muscles move down and outward).

Once the breathing mechanism is in place, the differences in vocal sounds that can be produced need to be explained and demonstrated to the children. Simply put, the teacher can speak to the children and say that this is her "indoor voice" or "talking voice," and then ask the children to echo the same sound and volume. Following the talking voice, is the "whispering" voice, the "shouting" or "outdoor voice," and the "inner hearing voice" (tonal memory). Once the children are familiar with and have practiced the steps just mentioned, the teacher may introduce singing in rounds, and excellent songs for this demonstration are "Scotland's Burning," and "Row, Row, Row Your Boat." A round is the singing of a melody by different voices (one begins and shortly following another begins the same melody), and should only be used with songs that the children are very familiar with, and that are suitable for singing in rounds.

Movement to Music

An important aspect of the child's learning is the inclusion of play, which allows for differences in abilities, development, interests, and cultures. When a child is playing, he interacts with others and the skills learned through peer interaction are crucial to multicultural peer relations and teamwork. Musical games provide many avenues for exploration and practice in the art of people skills and provide the added benefit of practice in problem-solving skills. Of further importance is motor development, and play is an ideal vehicle to assist in the fine-tuning of gross- and fine-motor muscle groups. The use of real-life activities in the interdisciplinary curricula encourages original thinking and independent learning, while addressing the issues of values, feelings, and cultural diversity.

Research by Gallahue (1982) states that between the ages of two and seven locomotor (e.g., creeping, walking, running, jumping, leaping, and galloping), nonlocomotor (e.g., stretching, bending, twisting, turning, shaking, and swinging), stability, and balance skills are developing rapidly, excelling in response to sufficient practice opportunities for the child. Creative movement and music is an enjoyable way for young children to develop these physical skills, while using their imaginations

to expressively communicate through body movements. All the senses are engaged when children explore and discover different aspects of movement, and these activities can be used to enhance most areas of learning.

Creative movement develops individual expressiveness and coordination, while music skills are refined using group activities and hands-on materials. Composing integrates aural and written skills and gives children a sense of ownership. Lastly, rhythm ensemble develops coordination, beat, inner hearing, and nurtures self-confidence and communication skills. The Mozart and the Young Mind (MYM) program builds a solid foundation of understanding and enjoyment of music, while allowing the child to explore and develop his or her own strengths in a variety of musical areas (Gordon, 2003). It provides a child-centered musical environment to facilitate development in all curriculum areas, while enabling the child to learn fundamental music skills (Harris, 2005b).

It is my belief that self-motivation and engagement are the keys to sound childhood learning, as well as exposure to experiences that promote the development of the child's intellectual, physical, and psychological abilities. The much-discussed topic of child health and fitness certainly benefits from music and movement activities, and the readily available opportunities to explore locomotion activities on a regular basis. Locomotion, or traveling through space, is very popular with young children, and contrasting actions such as "freeze" or "hold" performed to action songs assist the child in practicing control of his body. Development of balance and stability is acquired through making shapes with the whole body. While sitting or standing, children can change their body shapes and positions using various parts of their bodies, and on the cue "change," the children can produce another shape, or mimic that of another child.

Ideally, the goal of movement exercises is a physically fit child who regularly participates in physical activity, has a skillful movement repertoire, and values physical activity as a form of enjoyment (National Association for Sport and Physical Education, 2004). Educators can encourage overall healthy growth activities for young children by developing an enriched and challenging environment. The many music and movement lesson plans in chapter 9 provide the early childhood educator with the tools necessary to gain mastery in leading children toward muscular development through music and movement rhythms.

All musical experiences must be developmentally appropriate for the child; that is, they should match the child's cognitive, physical, and emotional development and reflect a safe and trusting environment for exploration and learning. An example of a developmentally inappropriate exercise is expecting a child to hop to a music beat when the child's motor development has not reached that stage and the child has not first mastered the task of clapping to the music beat. Each step of this learning should be mastered and secured before moving on to the more complex. Classrooms and curricula are designed to enhance this style of learning while offering many different ways to learn.

The hands-on exercises include objects and materials normally encountered in everyday living experiences and are fundamental exercises that the child needs to master for survival and general living in the adult world. The purpose of these activities is to help the child develop coordination, concentration, a sense of personal independence, and a sense of order. Through these exercises, the child develops the self-confidence and attention essential for mastery of the other areas of the classroom.

Musical Instruction

Mozart and the Young Mind is sequenced to teach concepts of pitch, dynamics, duration, timbre, and form, and accents the positive while refining the young child's listening, vocal, and fine- and gross-motor skills. Musical concepts are taught at the child's learning level, and emphasis is placed on accuracy of basic skills to provide a solid foundation for further musical growth.

The following is a detailed yearly calendar of musical instruction in the MYM curriculum, and the educator may refer to the following music timeline guide when preparing classroom lesson plans for each month. The lesson plans are broken down by month to accommodate a progressive curriculum from September to June and assist the teacher in developing the song repertoire. The basic song repertoire is introduced in the first lesson (September) and is continually built upon over the following months. Details on teaching specific concepts from the lessons can be found in chapter 9.

SEPTEMBER

Lesson Plan 1: Introduce repertoire of songs.

1. "Bombalalom"
2. "Here We Are Together"

3. “Mary’s Wearing Her Red Dress”
4. “Twinkle, Twinkle, Little Star”
5. “Finger Song”
6. “Turn Around, Clap, Clap”
7. “Clap, Clap, Clap”
8. “Irish Jig”—loud and soft
9. “A Ram Sam Sam”
10. “Old MacDonald”
11. “Do, Re, Mi” (sitting)
12. “Open, Shut Them”

The session begins with “Bombalalom,” a quiet song that can be sung by the teacher sitting on the floor, while the children gradually come and join her. “Here We Are Together” is used to introduce the children to each other and begin the process of name recognition. For those children who are feeling a little sad or insecure, the song “Mary’s Wearing Her Red Dress” works well, especially if the teacher holds the child on her lap and helps her to feel safe and secure in her new environment. “Twinkle, Twinkle, Little Star” is a song for any occasion, such as times when calming children is the objective. The “Finger Song” promotes concentration on the part of the child and teaches numeration and the basic finger position for piano studies. The songs to this point in the lesson are all sung while sitting, so the next two songs (“Turn Around Clap, Clap” and “Clap, Clap, Clap”) are necessary at this point to give the children the opportunity to stretch and move. Following the lyrics of the songs will guide the teacher and children as to the appropriate actions. “Turn Around Clap, Clap” begins by pointing a finger into the air and searching for the ear, elbow, and finally ankle, any body part will work. However, over time, the teacher may include additional appropriate actions as she sees fit, to add further interest for the children. Return the children to a sitting position and introduce “A Ram Sam Sam” with clapping on the knees as a focus activity to establish beat. For the words “goolie, goolie,” I use a roly-poly action with the arms, and during “a raffi” a wide circular motion with the hands above the head demonstrates the concept of “phrase.” “Old MacDonald” is a song that most children are familiar with and provides much excitement as each child performs the actions of the chosen farm animal. The “Do, Re, Mi” song is the basis for the year’s solfège instruction (for further information, see chapter 9) and “Open, Shut Them” is a powerful song for developing inner hearing. When the children are familiar with this song and its actions, it is performed silently with actions in its entirety. I suggest only performing the beginning of this song at first and continuing to add to it throughout the month.

OCTOBER

Lesson Plan 2: Introduce solfège and hand signs beginning with do, re, and then mi.

1. “Bombalalom”
2. “Here We Are Together”
3. “Finger Song”
4. Farm animals—goat, sheep, donkey, horse
5. “If You’re Happy and You Know It”
6. “Do, Re, Mi” (body movement)
7. “Do, Re”
8. “Do, Re, Mi”
9. Staccato and legato
10. “Mozart; Twinkle, Twinkle”; high and low
11. “A Ram Sam Sam”
12. “Freight Train”—tempo
13. “I Hear the Mill Wheel”
14. “Open, Shut Them”

This month the focus is on developing listening skills and enhancing the song repertoire. The children are also introduced to percussion instruments, while farm animal sounds are used with picture cards of the animals. The teacher can make

these materials and present similarly to any introductory nomenclature card exercise. First, place the animal cards on the table, and when the animal sound is heard, the teacher points to the corresponding animal and says its name.

When introducing the hand signs for “Do, Re, Mi,” it is important that the fist for *do* is placed at “belly button” or navel level, and that hand signs ascend from there as the sounds go higher. The children sit cross-legged while singing.

While the children remain sitting, introduce the two new songs “Freight Train” and “I Hear the Mill Wheel.” Both songs begin with tapping a beat on the knees and introduce a different, quicker movement, such as crossing hand over hand to indicate quicker rhythmic patterns. For example, tap knees for the words “freight train,” and cross hand over hand to tap opposite knees for the words “going,” *pause*, “so fast,” or tap knees for the words “I hear the mill wheel,” and then hand over hand for the words “tic-a tic-a tac-a.” The teacher may use her own movements; what is important is to demonstrate through movement that there is a rhythmic difference. Children should now be familiar with all of the hand actions for the song “Open, Shut Them,” which is sung quietly.

NOVEMBER

Lesson Plan 3: Explore musical styles through dance and movement with scarves.

1. “Bombalalom”
2. “Here We Are Together”
3. “I’m in the Mood for Clapping”
4. “Wake Up Toes”
5. “Turn Around, Clap, Clap”
6. “A Ram Sam Sam”
7. Winter friends—chickadee, squirrel, coyote, cardinal
8. “Hot Cross Buns”
9. “Do You Know the Muffin Man?”
10. Beethoven—“Ode to Joy”—freeze
11. “Freight Train”
12. “Aiken Drum”
13. “Open, Shut Them”

To add further interest to the song “Here We Are Together” the children are invited to take a turn naming some of their friends sitting together. It is helpful to sing the children’s names first, and then ask the child to name them in the same order. For the action song “I’m in the Mood for Clapping,” ask the children for suggestions as to what they may be in the mood for—clapping, jumping, or tapping? During the song “Wake Up, Toes” the children are reminded that all of the body remains still, except for the body part waking up. The children then enjoy the last verse where the whole body moves to the words “wake up *me*.” Winter friends are introduced with the nomenclature cards similar to the farm animals sounds. Any song where the children are expected to move and suddenly “freeze” (stop and hold the position for freeze), it is helpful to give the children prior warning by saying “get ready, we’re going to freeze.” “Do You Know the Muffin Man?” cultivates practice in correct vocal production, while “Hot Cross Buns” and “Freight Train” are now sung faster with each repeat, and tapping the beat while singing. “Aiken Drum” provides opportunities to emphasize story telling and vocabulary and is very much enjoyed when shakers are used during the chorus.

DECEMBER

Lesson Plan 4: Introduce world cultures and customs.

1. “Bombalalom”
2. “Here We Are Together”
3. “Mary’s Wearing Her Red Dress”
Intro to percussion bells and shakers

4. “Do, Re, Mi”
5. “Do, Re”
6. “Do, Re, Mi”
Time signatures of 2/4 and 3/4
7. Handel’s *Messiah*—dynamic expression
Cultural celebrations around the world

While introducing the concepts and beliefs of different cultures, the teacher can use this opportunity to discuss the subject of rituals in various cultures. Perhaps the children can describe the ritual of their own religions?

The teacher can show the children how to chant by singing a sentence on one note and dropping the last note lower. Then invite the children to sing back what was just sung. One of the children can take the lead and sing a sentence, which is then echoed by the group. The children can now take turns being the leader and improvising on the chant as desired.

Over time, the children begin to internalize the accented beat of the music and experiment with movement, such as taking large steps to the music when slow, and shorter steps on the beat to quicker tempos. While moving to the accent of the music, ask the children, “Is this song a stepping song?” (those in 2/4 time), or “Is this song a skipping song?” (those in 6/8 time). Cards of varying meters such as 2/4, 3/4, 4/4, or 6/8 can be used for further practice of meter recognition.

JANUARY

Lesson Plan 5: Introduce percussion instruments (see lesson plans in chapter 9).

1. “Bombalalom”
2. “Here We Are Together”
3. “I’m in the Mood for Clapping”
4. “Wake Up, Toes”
5. “Clap, Clap, Clap”
6. “Do, Re, Mi”
7. “Do, Re”
8. “Do, Re, Mi”
9. Staccato and legato
10. “Clickety, Clickety, Clack”
11. “Scotland’s Burning”
12. “Going to Kentucky”
13. “Sakura”—dance with scarves
14. “Ragtime”
15. Animal sounds—coyote, sheep, cardinal, horse, squirrel
16. “A Ram Sam Sam”
17. “I Hear the Mill Wheel”
18. “Freight Train”
19. “Toumba”—Israel
20. “Open, Shut Them”

Percussion playing comes in many forms and shapes, from body percussion to nonpitched instruments to pitched instruments. The teacher demonstrates the correct handling and playing of each instrument before introducing to the children (see lesson plans in chapter 9 for examples).

When using instruments, begin with nonpitched instruments all in resting position on the floor, then raise your hand to give the signal for each child to pick up the instrument immediately in front of him or her. The instruments are played for a short time to the beat of the music, for perhaps one verse of a song or four phrases in instrumental music. At this time, lower your hand, giving the children the signal to place their instruments in resting position. Now have each child pass the instrument to the child on his or her right, and the sequence is repeated, beginning with giving the signal to pick up the instruments again. Songs to introduce the playing of the instruments are “A Ram Sam Sam,” “I Hear the Mill Wheel,” “Freight

Train,” and “Toumba.” The song “Clickety, Clickety, Clack” demonstrates articulation. Children enjoy over-articulating the words of this song. “Scotland’s Burning” is introduced initially as a song and once the children are familiar with the words the solfège signs are added. Over time, the children are encouraged to omit one word at a time and demonstrate the corresponding action in its place. The song is repeated until all that remains are the solfège actions, which once again reinforce inner hearing and tempo. “Going to Kentucky” is a fun action song that allows for creative movement. I begin by following the suggestions of the lyrics, by moving from one foot to the other, shaking the body, rumble down and then up, and continuously turning around until the music says *stop*, at which point we *freeze*. Prepare the children for the upcoming tempo change by saying “now the music will be faster.”

We’re going to Kentucky, we’re going to the Fair
 To see the Señorita with ribbons in her hair
 Oh, shake it, baby, shake it, shake it if you can
 Shake it like a milkshake and drink it if you can
 Oh, rumble to the bottom and rumble to the top
 And turn around and turn around until you have to “stop.”

The various music selections listed can be replaced with any music of choice and culture. The movement with scarves is a creative motion decided by the child to express the movement and phrasing felt at the time. There is no correct or incorrect movement.

FEBRUARY

Lesson Plan 6: Timeline of composers.

1. “Bombalalom”
Intro to staff/timeline of composers
2. “Clap, Clap, Clap”
3. “Row, Row, Row Your Boat”
4. “Do, Re, Mi”
5. “Do, Re”
6. “Do, Re, Mi”
7. Staccato and legato
8. “Scotland’s Burning”
9. “Going to Kentucky”
10. Animal sounds—raccoon, robin, grasshopper, owl
11. Winter friends—coyote, chickadee, cardinal, squirrel
12. “I Hear the Mill Wheel”
13. “Toumba”
Silence game
14. “Open, Shut Them”

One of the most impressive of presentations is the timeline of the creation of the universe from the beginning of time to the twenty-first century. Spreading the timeline across the floor offers a visual representation of the incredible length of time that has passed, and our place in this stretch of time. With a little research (most readily available information can be found on the Internet), teachers can create similar impressive timelines for the development of music. Seeing a timeline of the history of music from ancient times up to the present provides students with a visual timeframe for the progress of musical forms throughout the ages. This can be followed by a timeline of the composers and where they fit in the timeframe of the historical development of music. Last but not least, a timeline of the growth of musical instruments in relation to the history of music opens up many conversations and work projects for the inquisitive mind to ponder. The staff is introduced through the many lesson plans detailed in chapter 9. The song “Row, Row, Row Your Boat” is built upon next month as a mapping song, and *winter friends* are introduced with nomenclature cards. The silence game is a wonderful tool for developing listening skills and can be seen in lesson plans in chapter 9.

MARCH

Lesson Plan 7: Introduce Prokofiev's Peter and the Wolf and follow with attendance at a live concert by the local orchestra or community band.

March—Weeks 1 & 2

1. Bombalalom
2. Here We Are Together
3. Introduce half of *Peter and the Wolf* (10 minutes each day)
4. Going to Kentucky
5. Scotland's Burning
6. Open, Shut Them

March—Week 3

1. *Peter and the Wolf*—poster of characters and corresponding instruments
2. Review of instruments

March—Week 4

1. *Peter and the Wolf*—matching character cards and instrument cards
2. Introduction to orchestral families of instruments

The children are now introduced to the instruments of the orchestra and the place Prokofiev plays along the timeline of musical development. Great enjoyment is taken from *Peter and the Wolf*, a musical tale for children.

Generally speaking, it is best to play only the first half of *Peter and the Wolf* to accommodate the attention span of the children, and the second half on another day. This can be accompanied by the visual representation of the story, which is told in many picture books available at most libraries. By week 3, the children have heard the work in its entirety, are familiar with the characters and instruments and are ready for matching exercises. A large poster indicating each character—in the order of introduction in the musical work—and the corresponding musical instrument adjacent offers a visual representation to the child. First, the teacher points to each character and corresponding instrument when they are introduced in the musical tale and later asks the children to take turns pointing. Once the knowledge of instruments and characters is established, move to the next step of matching instrument with character. Children are given a card that is either a character or instrument; when the instrument is heard in the music, both children hold the matching cards above their heads. For example, if Peter is represented in the music, the child with Peter's card and the child with the violin card hold their cards up high.

Ideally, high school or university students who are willing to come to the classroom and demonstrate the genuine instruments for the children are a big hit. Scheduling such events may be difficult; however, the beginning of the month is preferable to introduce the concrete before the abstract. It is my experience that very young children may become frightened of the large sound some instruments produce, such as the French horn, and it is advisable to suggest to the performer a *pp* to *mf* volume to begin with.

APRIL

Lesson Plan 8: Introduce mapping of song, timbre recognition, and staff notation.

1. "Hello"
2. "Scotland's Burning"—Solfège
3. Baby animals—kittens, ducklings, puppies, baby birds
4. Spring sounds—raccoon, robin, grasshopper, owl,
5. The Button and the Key

6. "Row, Row, Row Your Boat"—mapping
7. "Bombalom"—mapping
8. "Open, Shut Them"

This month the children introduce themselves to each other through movement in the "Hello" song—"Hello, Hello, Hello, te-triple-te-trip-te-trip." Each child faces a partner and claps both hands on knees for the first half of the word "hel-lo" and raises hands and claps the partner's hands for the second half of "hel-lo." This is repeated twice. Looping opposite arms the children circle round each other for "te-triple-te-trip-te-trip." The movements are repeated for the next line in the song "Goodbye, goodbye, goodbye, te-triple-te-trip-te-trip." For the following few bars of music, each child moves around the room in search of a partner, stopping only when the music stops. Facing a new partner, the process is once again repeated. Some children need lots of practice in this game because it demands coordination, listening, time management, and so forth. The "Button and the Key" is a much-in-demand song by children of all ages and is a fun way to introduce the concept of "timbre." The children sit with eyes closed and listen to who answers the question asked "Who has the button?" and "Who has the key?" It is only through hearing that they must decide which friend the voice sounds like.

A musical phrase is similar to a sentence in language, usually four to eight bars in length followed by a natural breathing place. An extension of this exercise is mapping, where the children trace and draw the song form. Mapping the song on paper provides a visual representation of the phrasing of a song. Materials needed are large sheets of blank paper and large free-flowing markers for color. First, the children sing the song while sitting on the floor with paper and marker in front of them. Each child then uses his finger as a pointer, to practice drawing the song form. Repeat until the children are ready to draw their song form on the paper with a marker. Once the song form is completed, the song is sung again, while the children trace their drawings with their fingers. The children should reach the end of the drawing by the time they sing the end of the song. The song "Row, Row, Row Your Boat" is a visually simple song to map. For example, draw a zigzag pattern stopping on each word of "row, row, row your boat gently down the stream," and for "merrily, merrily, merrily, merrily" draw circular shapes, returning to the zigzag pattern for the last line of the song "life is but a dream." Mapping is multi-sensory because it connects listening, singing, seeing, moving, and touching all into one activity. It is the expression of the whole of the song as experienced.

MAY

Lesson Plan 9: Notation on the staff and dynamic cards.

1. "Hello"
2. "Down by the Bay"
3. "Scotland's Burning"
4. Gershwin—jazz/ragtime
5. "Row, Row, Row Your Boat"

The Mozart and the Young Mind teaching philosophy is based on establishing a concrete basis of knowledge before introducing abstract concepts. This belief is directly compatible with the now-popular sound-before-symbol teaching process in which the child experiences music aurally and kinesthetically before labeling and reading its symbolic representation. The child's education at which she is ready to move on to this stage of musical notation depends on the age and experience of the child. Many children at the early childhood level may be ready for formal notation, only to excel at it at the elementary level. As with all curriculum development, the teacher decides based on the child's knowledge of basic concepts and readiness to move on to more abstract concepts and introduces the appropriate materials at the child's various developmental stages.

JUNE

Lesson Plan 10: Exploration of creativity and improvisation.

1. Improvisation
2. Rounds

3. Playing bells from staff
4. Dance expression to music of Mozart, Beethoven, Prokofiev, Gershwin
5. Music of Africa, Asia, Europe, South America, Australia, Russia, North America, India
6. Solfège
7. Drum, echo, and improvisation

Singing rounds is an activity children enjoy and it should be introduced toward the end of the school year. The children should be very comfortable in singing the songs, on pitch, with accurate beat before attempting to sing in round. A round is a song that is sung by two (or three) groups simultaneously with one group starting usually two bars after the other. It is best for the children to begin singing first and for the teacher to join in quietly with the second part so that the children can hear the other part of the round but are not distracted by it and lose their singing place in the round. Once this is mastered, the children may divide into two groups singing the rounds, and later three groups with the assistance of the teacher. “Scotland’s Burning” is a song very suitable to singing in rounds.

Improvisation and creativity in music and movement will flourish in a relaxed and accepting classroom where novel ideas and individual attempts are respected and encouraged. Improvisation can be explored through singing, timbre, rhythm, form, and melodic expression, while composing involves notating these creative musical ideas for later performances.

Including songs that are examples of sign language for children with hearing difficulties also educates the rest of the class in methods of communication. Children with hearing difficulties benefit from being included in music class. Through vibrations felt physically, the visual stimulation of watching an ensemble perform, and understanding the lyrics with signing, the music class becomes an exciting and enriching experience particularly for everyone including the hearing-impaired child.

Building Music Curriculum

Building depth in musical understanding takes time and requires thoughtful decisions on the part of the educator regarding which musical styles to include in the music curriculum. Music styles to include are folk songs (lullabies and chants), traditional songs (ceremonial music and dance), western art music (instrumental and choral music from the baroque, classical, and romantic periods), western twentieth-century musical theater and film music (Broadway, movie themes, etc.), and music from countries around the world, including Africa, Asia, the Middle East, and Australia.

Singing, keeping rhythm, playing the keyboard, and learning theory and composition are combined in each lesson to reinforce the teaching points of the lesson. Care is taken to provide gross-motor and fine-motor activities, and the lesson is designed with the child’s attention span and abilities in mind. Composing integrates aural and written skills and gives children a sense of ownership. Lastly, participating in a rhythm ensemble develops coordination, beat, and inner hearing and nurtures self-confidence and communication skills. Rhythm ensemble playing builds a solid foundation of understanding and enjoyment of music while allowing the child to explore and develop his or her own strengths in a variety of musical areas (Gordon, 2003). Such rhythm playing provides a child-centered musical environment to facilitate development in all curriculum areas, while enabling the child to learn fundamental music skills (Harris, 2005b).

Music educators who work with young children and infants have found that the best way to meet the musical developmental needs of the young child is to create an environment and opportunity for the child to express himself through movement, whether creative or structured. When the child enters an early childhood classroom, the use of music as a spontaneous expression continues from that experienced at home, and the teacher gradually introduces the elements of music in a more structured way. This developmentally appropriate music curriculum for young children is flexible enough to accommodate the diverse interests and learning styles. Mozart and the Young Mind places the educator as facilitator and colearner. It builds upon the widely accepted standards set forth for each age level (National Association for the Education of Young Children, 2001b), maintains respect and recognition of the individual, and is taught in a flexible manner with opportunities for creativity and exploration.

CHAPTER 9

Lesson Plans of Basic Concepts

The secret of good teaching is to regard the child's intelligence as a fertile field in which seeds may be sown, to grow under the heat of flaming imagination.

—Maria Montessori (1899, p. 15).

Teachers and parents are responsible for nurturing our young children and providing them with stimulating and prepared environments. Although teachers have heightened education in the art of teaching children, they often receive only one, or maybe two, classes in music or elementary music methods, and as a result, often feel much less comfortable with their personal musicianship. The following step-by-step approach to a music-enriched curriculum gives educators a basic understanding of music and its practical application in a preschool setting.

In the early years, when the entire foundation of musical knowledge is laid, it is important that the young child receive at least two music sessions weekly. Ideally, music is entrenched in the everyday curriculum allowing for additional music sessions throughout the week. A minimum of two sessions weekly makes the continuity of the curriculum sequence possible, though the length of the period or session is not so important as its frequency. Two 15–20 minute sessions with preschool-age children are more valuable than one 40-minute session. However, at a minimum, a 15–20 minute session daily is ideal. A well-defined music program integrated into the early childhood curriculum promotes:

- Knowledge of musical concepts (rhythm, steady beat, melody, and dynamics)
- Creative expression and opportunities for aesthetic expression
- A sense of collaboration

Summary of the Curriculum Time Frame

INTRODUCTION

Children receive an introduction of ground rules and familiarization with the classroom environment, classmates, teachers, materials, and so on.

This is the time to establish the basis of the music curriculum upon which further learning can take place. Sing, sing, sing. Instruction can be given in song form: “Come Follow Me,” “Here We Are Together,” among others. Singing now the songs to which games, solfège, actions, percussion, rounds, and movement will be added later creates a familiarity and comfort level for the children.

FIRST QUARTER

The children are now familiar with the classroom routine, materials, and expectations and are enjoying singing a repertoire of songs. Using these familiar songs, the teacher now introduces the concepts of (a) beat, (b) fast-slow, (c) long-short, (d) loud-soft, and (e) timbre. The correct vocabulary should be used and repeated by the children for accuracy.

SECOND QUARTER

Continuing to build upon this repertoire of songs, the concepts of accent, and simple/compound duple meter can be introduced. Motion songs will introduce a musical response to the music, while introducing the children to a variety of musical styles, tempi, dynamics, moods, and feelings. These activities provide the children with the opportunity to experience music through singing, movement, and response to the rhythm patterns. The “silence game,” which demonstrates silence and stillness, can be introduced at this time.

THIRD QUARTER

Music appreciation is fostered through carefully chosen music that introduces the children to great music through the ages. Appealing classical music, familiar marches, circus music, and musical stories will enhance music appreciation. Introducing the instruments of the orchestra, making percussion instruments in class, visiting a live instrumental performance secure the process of moving from the concrete to the abstract. The concepts of phrase and form are now easily reinforced through “mapping” an activity that gives children great pleasure.

FOURTH QUARTER

Melodies to sing, using either solfège or letter names, help students learn to match pitch and discover tonal elements of music. Musical bells offer further practice in matching, grading, and composition. Introduction of music symbols, treble and bass clef, note and rest values, and a timeline of composers and musical styles complete this preschool music curriculum.

This music curriculum is designed to be carried out over the time frame of one school year (September to June), or it can be expanded and more thoroughly accomplished over a longer period of three years.

—w— Vocal —w—

Silence Game

The backbone of the music program is singing. However, the ability to listen, to quiet one's movement and remain still, to quiet oneself, and to listen attentively contributes to developing listening skills necessary for music learning. Keeping the exercise short in the beginning will allow children to focus their attention on the quietness, and eventually they will develop the ability to sit and listen for longer periods of time.



Material: The child
Purpose/Aim: Introduction to the concept of silence
 Development of listening skills
 Development of concentration skills
 Development of body control



PRESENTATION

The most effective method of teaching listening skills is to begin with silence. Particular time and attention should be given to the appropriate time to introduce this exercise, and the length of time to sit quietly. Before beginning, the majority of the children need to be prepared for this exercise for it to succeed.

Walk around the classroom softly humming a song and ensure that each child understands it is now time to come sit in the circle. Continue humming softly until all children have joined the group and are listening quietly to the soft humming. Tell the children that today the exercise will explore the silence surrounding them. First, take a moment for the children to prepare themselves and find a comfortable sitting position. Now ask the children if they are ready, are they comfortable and ready to sit quietly and explore the silence. When everyone agrees, explain there are some sounds that perhaps they will hear over the silence, for example, the child's breathing, the ticking clock, or perhaps a bird outside the window. Explain that they can close their eyes if they like, or watch the hands moving on the clock (this usually helps the child who has difficulty sitting still by providing something visual to concentrate on). Explain that the exercise is over as soon as someone breaks the silence. Tell the children to watch the clock with you and be prepared to begin when the big hand reaches the 12:00 position. Once ready, place a finger on your lips to indicate to the children the exercise has begun. The first introduction to silence may end after thirty seconds when the first child breaks the silence, but over time this exercise has lasted as long as twelve minutes, while the children delight in listening to the silence and often unexpected sounds of the environment.

Song

The backbone of the music program is singing, and the teacher's role is to introduce melodies that match the children's abilities. Repetition of the easy tunes will strengthen children's singing voices. Keeping the music simple will allow children to focus their attention on pitch, melody, and rhythm, and eventually they will become more accurate.



Material: Singing voice
Purpose/Aim: Production of sound in an appropriate range
 Proper posture and breathing
 Introduction to and memorization of songs



PRESENTATION

The most effective method of teaching melody is teacher modeling. The song to be sung should have simple repetitive segments, repeatedly sung in its entirety in child-appropriate pitch range with tonal quality. Often children sing “out of tune” simply because the beginning note was not firmly established. Particular time and attention should be given to the first note. Before singing, hold the pitch while the children attempt to find it. When all are in unison, singing may begin. Once the children are familiar with the song, its dynamics (loud–soft) and the vocabulary “higher” and “lower” can be introduced—first by singing the same song in a higher key and later by stretching and bending at appropriate highs and lows in the music.



VARIATIONS

Silence Game

An opportunity for the children to develop concentration, focus, and listening skills while being as calm as possible.

Song and Inner Hearing

The ability to listen and hear the song without vocalizing is cultivated over time. First, the song is sung with actions and gradually the words are removed. The actions enable the children to keep a steady beat in unison while continuing to develop inner hearing, e.g., “Open, Shut Them.”

Song and Solfège

Introduce the solfège hand signs while singing the major scale. A further exercise is to use solfège with a familiar song and gradually remove all oral sounds until the song, such as “Scotland’s Burning,” is sung with only solfège signs.

Curwen/Glover Hand Signs

John Spencer Curwen drew upon an earlier music teaching system known as Norwich Sol-fa, which had been devised by Sarah Glover, and developed hand signs to go with the solfège syllables (*do, re, mi*, etc.). Hand signs are a way of giving a physical placement for a vocal pitch. The low “doh” begins at your mid-section and each hand sign goes up as the pitch rises, ending with the upper “doh” at eye level.

Walking the Line

One of the most basic concepts for young children to develop is balance, the coordination of their body movements.



Material: Tape to mark a line on the floor and a basket with beanbags
Purpose/Aim: Maintenance of vertical balance
 Development of equilibrium



PRESENTATION

The teacher demonstrates walking naturally, placing one whole foot on the line at a time. The child may need assistance when it is his turn to walk the line. Once this is mastered, demonstrate slowly how to walk heel-to-toe on the line while varying the pace.



VARIATIONS

Walking holding a flag

When walking with a flag, show the child how to hold his hands straight out in front and hold the flag with both hands.

Walking carrying beanbags

Beanbags suspended from ribbons can also be carried by holding the arms out straight in front.

Walking holding a glass of water

Once the child has developed basic balance skills, she is now ready to carefully carry a glass of water without spilling.

Walk holding a lit candle

This exercise is *always* done under the supervision of the educator. Birthday celebrations are excellent opportunities for children to carry a large lit candle. The child walks naturally, while carrying the candle with both hands. Ensure the child's hand is not near the melting wax and supervision is close by.

Beat

One of the most basic concepts for the young child to develop is the ability to feel a steady beat in music. Movement combined with singing, playing instruments, and listening is offered in a simple-to-complex sequence for teaching.



Material: Singing voice and/or recorded music
Purpose/Aim: Beat awareness
Song memorization
Development of listening skills



PRESENTATION

Begin with the children sitting on the floor. First, the teacher sings a song familiar to the children and pats the beat on her lap while the children imitate her with large motions. With repeated practice, most children will begin to tap the beat to familiar songs without assistance from the teacher. Specific response to beat is a learned skill that requires time and practice.



VARIATIONS

Development of motor skills

Development of gross-motor skills (through such movements as swaying, marching, jumping, hopping, or tapping one's foot) and fine-motor skills (developed through finger or hand movements accompanying singing or listening to music) provides an additional dimension to musical expression. For children's first attempt to step to the beat, use familiar songs that match the child's natural walking tempo. Remember that children's legs are shorter and their natural stepping tempo is faster than that of adults.

Stepping evenly to a beat requires considerable skill for younger children. It should be gradually approached after many months of confidently clapping a beat while sitting.

Song and Inner-Hearing

The ability to listen and hear the beat without vocalizing is cultivated over time. First, the song is sung with actions, and gradually the words are removed. The actions enable the children to keep a steady beat in unison while continuing to develop inner hearing. e.g., "Open, Shut Them."

Tempo: Fast-Slow

Since tempo involves the speed of the steady beat, children should have experienced activities in beat awareness before attempting to build upon this knowledge with lessons about tempo.



Material: Singing voice and/or recorded music
Purpose/Aim: Tempo discrimination
 Tempo production
 Development of listening skills



PRESENTATION

Working upon a well-known repertoire of songs, students can show tempo discrimination while sitting, perhaps by raising a hand when the music is fast, and lowering the hand when the music is slow. Children can demonstrate an understanding of tempo with movement by changing direction each time the tempo changes. Call and response songs, such as “Down by the Bay,” provide greater success as the young child has the benefit of hearing the teacher establish the tempo before the child is called upon to respond.



VARIATIONS

Quick-moving game songs

Ideal for focusing children’s attention on tempo are “We’re Going to Kentucky” and “I Hear the Mill Wheel.” In these songs, the music quickens as the children repeatedly move their bodies to the tempo of the song.

Musical Vocabulary

The words “fast,” “faster,” “stop,” “now slower,” and “slower” assist in developing a musical vocabulary. Four- and five-year-olds can learn that the fastness and slowness of music is tempo. The words “faster,” “slower,” and “tempo” should be repeated often with this musical activity.

Percussion instruments

Drums can further develop tempo production. Children should be reminded to keep the drums in “resting position” (placed gently on the floor in front of the child) while not in use.

Rhythm: Long-Short

Children often think of rhythm as “the way the words sound.” This aids in the recognition of rhythmic patterning, since most children’s immediate focus is on text when listening to music.



Material: Singing voice, recorded music, and percussion instruments
Purpose/Aim: Awareness of rhythm
 Production of rhythmic patterns
 Rhythmic notation



PRESENTATION

Working upon the very familiar repertoire of songs, children are asked to clap or tap “the way the words sound” while singing a song. Children can sing short (four-beat) motifs from songs, using the words “long and short,” or clap the rhythm to “Happy Birthday to You” (short, short, long, long, long, long).



VARIATIONS

Move from clapping

Have children progress from clapping the rhythm to playing the rhythm on drums or rhythm sticks while singing. This further establishes the beat and takes the child from body percussion to instrument percussion.

Rhythm and notation with cards

When introducing rhythm sticks, show the children how to strike one stick against the middle of the other with the bottom stick held firmly in place. Children should be reminded to keep the drums in “resting position” (placed gently on the floor in front of the child) while not in use.

Rhythm, Language, and Song Recognition

Most children love to listen to the teacher tap the rhythm of a “mystery” song and then try to identify the name of the song.

Dynamics: Loud-Soft

Ample practice at keeping a steady beat is recommended before progressing to this exercise.



Material: Singing voice and/or recorded music
Purpose/Aim: Dynamic discrimination
 Dynamic production



PRESENTATION

In initial performances of the song, the teacher should vary the dynamics quite distinctly changing from very loud (*fortissimo*) to very soft (*pianissimo*) to assist the children in gauging the differences they hear in the dynamics as accurately as possible. The children can demonstrate the differences with movement—perhaps standing big like an elephant when hearing loud music, and becoming small like a mouse when hearing music played softly.



VARIATIONS

Loud and soft can also be demonstrated by singing a song very softly to the children, without comment, as something for them to listen to, such as “Hush Little Baby.” After they have heard the song a number of times, invite the children to sing it. Ask them to describe how the song makes them feel: “sleepy,” “quiet,” and “soft”? This “soft” song should now be compared with a song of very different character—one the children have sung in a much louder voice, such as “Going to Kentucky.”

Musical Vocabulary

The words “medium,” “loud,” “louder,” and “medium,” “soft,” “softer” assist in developing a musical vocabulary.

Percussion instruments

Have children tap softly when hearing music played at *p* and loudly to music played at *f*. Most children tend to speed up when playing loudly and slow down when playing softly.

Notation

Dynamic notation and the use of cards take children from the concrete to the abstract. The dynamic differences are no longer demonstrated by movement, which is replaced by a visual representation of the terminology used to describe dynamic levels.

Timbre (TAM-BĒR)

The term “timbre” refers to *the tone color* of an instrument or voice.



Material: The child

Purpose/Aim: Timbre discrimination, production, and composition



PRESENTATION

The timbre of the voice refers to the quality of the sound produced. The simplest example of timbre is the difference between the sounds produced by the reed instruments (e.g., clarinet compared to that of the oboe) or the difference between the sound of a man’s voice and that of a young child.

A good exercise for teaching timbre discrimination is to have children sit in a circle with eyes closed while listening to the sound of each other’s voice as each child takes a turn saying his or her name. To add further to the discrimination of timbre, have a child attempt to disguise his voice by saying his name differently. In each exercise, the sounds are similar with the tone or timbre giving the sound its unique distinguishable quality.



VARIATIONS

Games

Playing the game “Button and the Key” (see appendix B) encourages careful listening skills as the children answer with their name; over time resort to disguising their sounds by either whispering, shouting, talking, or singing.

Body percussion

The most accessible and easily manipulated means of producing sound is the child’s own body. Using the body as an instrument to make different sounds—such as snapping, clapping, or stamping—to highlight text is always enjoyed.

Instruments

Another means of producing different sounds is through the use of various percussion instruments. They can be used to distinguish timbre—whether it is metal, wood, or skin. Eventually the children should be able to name the instrument they hear with eyes closed.

Music sound shakers

Sound shakers are easily made to produce different degrees of sound, such as filling small plastic shakers with rice, pasta, pebbles, stones, etc. Creating shakers in sets of two offers an exercise in matching, while introducing each set as different sounds offers a further exercise in differentiation.

Live performances

Live musical performances are usually the most powerful medium through which children can experience the timbre of orchestral instruments. There are many opportunities for the young child to experience live performances, for example, family performances at home, college music students who are willing to come to school and demonstrate orchestral instruments, or parents with knowledge of their cultural music genre can come into the classroom to offer the children a personal connection with music from other cultures.

Accent

In this context, an accent is defined as a stress, such as an increase in dynamic level.



Material: Singing voice, recorded music
Purpose/Aim: Awareness of rhythmic patterns
 Production of rhythmic patterns
 Rhythmic notation



PRESENTATION

When children have learned to tap and step the beat accurately to many songs, it is possible to introduce the concept of stressed or accented beats. Swaying to the accent of the music assists children in internalizing the beat. In the beginning, the teacher simply moves to the accent and the children imitate.



VARIATIONS

Movement

Over time the children begin to internalize the accent and experiment with movement. The teacher may now introduce songs of varying tempo and, while the children tap the beat, ask, “Is this a fast song?” or “Is this a slow song?” Moving from one foot to the other in time to the beat of the song assists in establishing a strong accent. Explain to the children that the beat is not every sound the music makes, or every word of the song, but rather a pulse or accent that feels very strong.

Meter

While moving to the accent of the music, ask the children, “Is this song a stepping song?” (in 2/4 time), or “Is this song a skipping song?” (in 6/8 time). “Hot Cross Buns,” (in 2/4 time), “Hey, Hey Look at Me” (in 4/4 time) (a repetitive strong-weak beat), while “The Mulberry Bush” and “Oats, Peas, Beans” are examples of 6/8 songs (a repetitive strong-weak-weak beat). These beats will be easily discernible.

Cards

Cards of varying meters—such as 2/4, 3/4, 4/4, or 6/8—can be used for further practice of meter recognition. These are discussed in further detail later in this chapter.

Phrase

A musical phrase is a short figure or passage complete in itself and unbroken in continuity.



Material: Singing voice, recorded music
Purpose/Aim: Introduction to musical structure



PRESENTATION

Begin by singing a familiar song. A musical phrase is similar to a sentence in language, usually four to eight bars in length followed by a natural breathing place. Instruct children to make an arc-shaped motion with their right arm, from left to right, as this mimics the actual musical notation symbol for a phrase. Teachers must show the arc from right to left if the children are to mirror it and perform from left to right in the direction of reading.



VARIATIONS:

Movement

A phrase can also be demonstrated through movement. Using the song “It’s a Small World,” the children walk in a circle while singing the song and change direction after each break, or phrase in the song. “It’s a small world after all” (break), “It’s a small world after all” (break).

Listening skills

The ability to listen and hear the phrasing of a song without vocalizing is cultivated over time. In the first step, the child moves as in the above exercise whereby each phrase of a song is symbolized by moving in a different direction. This is a physical representation of a phrase. The next step is to visualize and hear the phrase without the physical movement.

Visual representation

First sing the song using the words as a tool to identify phrasing:

It’s a small world after all,
It’s a small world after all,
It’s a small world after all,
It’s a small, small, world.

Gradually remove the words and make a big arc from left to right with arms above the head for each phrase while humming the song.

Form

Form is an extension of phrasing and should only be introduced after children can identify different phrasing with ease. The following song helps to show “same” and “different.”



Material: Singing voice, recorded music and scarves
Purpose/Aim: Further practice with phrasing
 Introduction to musical form



PRESENTATION

The different forms can be identified while singing the song by pointing to matching shapes as shown in this example from “Hot Cross Buns.”

Hot cross buns	original song form	O
Hot cross buns	same form as original	O
One a penny, two a penny	different form	X
Hot cross buns	same form as original	O



VARIATIONS

Movement

While listening to orchestral work, different forms can be identified and demonstrated by teachers and students with movement, such as clapping hands to the rhythmic beat of one section (A), followed by creatively moving with scarves during the (B) section. Children are encouraged to move freely, expressing the music in whatever manner is most natural to them.

Mapping

An extension of this exercise is mapping, where the children trace and draw the song form. Mapping the song on paper provides a visual representation of the phrasing of a song and is useful in preparing the child for further work with notation. Materials needed are large sheets of blank paper and large free-flowing markers for color. First, the song is sung while children sit on the floor with paper and marker in front of them. The child then uses his finger as a pointer to practice-draw the song form. This can be repeated until the child is ready to draw his song form on the paper with the marker.

Once completed, the teacher and children sing the song again, while each child traces his drawing with his finger. The child will reach the end of his drawing by the time he sings to the end of the song. Mapping is multisensory as it connects listening, singing, seeing, moving, and touching all into one activity. It is the expression of the whole of the song as experienced.

—w— Orchestral Instruments —w—

Instruments should be systematically introduced through live performance wherever possible. (Beginning school band and orchestra students often make the best demonstrators.) However, in preparation for the first symphony concert good-quality reproductions of carefully chosen music accompanied by pictures or videotapes may be substituted. Sergei Prokofiev's *Peter and the Wolf*; a musical tale for children provides an exciting auditory and visual introduction to the four families of symphonic instruments:



Material: High-quality recordings and/or live performers
Purpose/Aim: Introduction to orchestral instruments
 Aural recognition of instruments
 Visual recognition and naming of instruments



PRESENTATION

Peter and the Wolf by Sergei Prokofiev (1891–1953)

The teacher reads the pictured story of *Peter and the Wolf* to the children. This provides a visual representation of the story. Teacher and children quietly listen to the recording and then discuss the characters, their roles, and the instruments and their sound qualities.

Strings: Violin–Peter
 Brass: French horn–wolf, Trumpet–hunters
 Woodwind: Bassoon–Grandpa, Flute–bird, Oboe–duck, Clarinet–cat
 Percussion: Timpani–hunters' guns



VARIATION

Cards

Using cards with pictures of the instruments and (teacher made) cards of the characters in the story, each child holds a card that she raises upon hearing the corresponding instrument or character. For example, when the violin is playing and representing Peter, two children will hold up cards, one with a picture of Peter and the other with a picture of a violin.

—w— Percussion Instruments —w—

Wooden Nonpitched Instruments

Rhythm Sticks

Material: Rhythm sticks
Purpose/Aim: Introduction to rhythm sticks instrument
 Aural recognition of instrument
 Visual recognition and naming of instrument
 Demonstration of use of instrument



PRESENTATION

Select the rhythm sticks from among the percussion instruments. Pick them up and rest both of them in the palm of one hand with the other hand holding the extended sticks securely. Carry them to a rug and carefully place them down without making any noise. Sit down, place hands in lap, look at the rhythm sticks lying on the rug, and say “resting position.” Gently pick up one stick with the left hand and the remaining stick with the right hand, and say “rhythm sticks.” While the left hand firmly holds the rhythm stick in a horizontal position from the body, strike it gently in the middle with the other rhythm stick held in the right hand. The sound dies immediately. Signal to the children that there is silence. Return the rhythm sticks, left hand stick first, followed by remaining right hand stick, to their place on the rug and invite the children to take turns. When finished, one child returns the rhythm sticks to their place on the shelf.



VARIATIONS

All wooden nonpitched instruments

Continue to present more wooden nonpitched instruments until the children are familiar with the name, sound, and correct use of each instrument.

Categorizing

The percussion instruments can also be categorized by materials used—metal, wood, or skin.

Maracas, Wooden



Material: Maraca
Purpose/Aim: Introduction to a Latin American instrument
Aural recognition of instrument
Visual recognition and naming of instrument
Demonstration of use of instrument



PRESENTATION

Select a maraca from among the percussion instruments. Pick it up and carry it with the head cradled in the palm of one hand and the fingers of the other hand holding the handle. Carry it to a rug and carefully place it down without making any noise. Sit down, place hands in lap, look at the maraca lying on the rug, and say “resting position.” Gently pick it up, say “maraca,” and then shake it above your head. Keep listening until the sound can no longer be heard and repeat the process twice more. Return the maraca to its place on the rug and invite the children to take turns. When finished, one child returns the maraca to its place on the shelf.



VARIATIONS

The maraca can also be played by gently tapping it against the palm of the hand.

All wooden nonpitched instruments

Continue to present more wooden nonpitched instruments until the children are familiar with the name, sound, and correct use of each instrument.

Categorizing

Using cards, the percussion instruments and cards can be categorized by materials used—metal, wood, or skin.

Auditory discrimination

The percussion instruments can be categorized by the quality of the sound produced. For all exercises, once demonstrated, invite the children to take turns.

Wood Block



- Material:* A wood block
- Purpose/Aim:* Introduction to wood block instrument
Aural recognition of instrument
Visual recognition and naming of instrument
Demonstration of use of instrument



PRESENTATION

Select a wood block from among the percussion instruments. Pick it up and carry it in the palm of one hand and the fingers of the other hand placed gently on top to hold securely. Carry it to a rug and carefully place it down without making any noise. Return and pick out a wooden-tipped mallet and carry it carefully with the head cradled in the palm of one hand and the fingers of the other hand holding the handle. Sit down, place hands in lap, look at the wood block lying on the rug, and say “resting position.” Gently pick it up with left hand and say “wood block.” Now pick up the mallet with the right hand and say “mallet.” Balance the wood block in the palm of the hand and strike with the mallet. It produces a loud knocking sound. Repeat the process twice more. Return the wood block and mallet to the rug and invite the children to take turns. When finished, one child returns the wood block to its place on the shelf, and then returns the mallet to its place on the shelf.



VARIATIONS

All wooden nonpitched instruments

Continue to present more wooden nonpitched instruments until the child is familiar with the name, sound, and correct use of each instrument.

All skin nonpitched instruments

Continue to present more skin nonpitched instruments until the child is familiar with the name, sound, and correct use of each instrument.

All metal nonpitched instruments

Continue to present more metal nonpitched instruments until the child is familiar with the name, sound, and correct use of each instrument.

Categorizing

The percussion instruments can also be categorized by materials used—metal, wood, or skin.

Auditory discrimination

The percussion instruments can be categorized by the quality of the sound produced.

Hand Drum



Material: Hand drum
Purpose/Aim: Introduction to hand drum instrument
 Aural recognition of instrument
 Visual recognition and naming of instrument
 Demonstration of use of instrument



PRESENTATION

Select a hand drum from among the percussion instruments. Pick it up and carry it in the palm of one hand and the fingers of the other hand placed gently on top to hold securely. Carry it to a rug and carefully place it down without making any noise. Sit down, place hands in lap, look at the hand drum lying on the rug, and say “resting position.” Sit cross-legged and with both hands pick up the hand drum and place it on the floor. Hold the drum by the rim with left hand and gently tap the skin side with the fingertips, or ball of hand. Repeat the process twice more. Return the hand drum to its place on the rug and invite the children to take turns. When finished, one child returns the hand drum to its place on the shelf.



VARIATIONS

Conga Drum

Sit cross-legged and pick up the conga drum with both hands and place it on the floor between your legs. Hit the skin of the drum with the whole hand, fingertips, or heel of hand, or knuckles. The produced sound varies depending on how and where the player hits the skin. Repeat the process twice more.

Bongo Drums

Introduce the Latin American bongo drums in the same manner as the conga drums.

All skin nonpitched instruments

Continue to present more skin nonpitched instruments until the child is familiar with the name, sound, and correct use of each instrument.

Categorizing

The percussion instruments can also be categorized by materials used—metal, wood, or skin.

Auditory discrimination

The percussion instruments can be categorized by the quality of the sound produced.

—w— Metal Pitched Instruments —w—

Jingle Bells

Material: Jingle bells
Purpose/Aim: Introduction to bell instrument
 Aural recognition of instrument
 Visual recognition and naming of instrument
 Demonstration of use of instrument



PRESENTATION

Select a jingle bell from among the percussion instruments. Pick it up and carry it with the head cradled in the palm of one hand and the fingers of the other hand holding the handle. Carry it to a rug and carefully place it down without making any noise. Sit down, place hands in lap, look at the jingle bell lying on the rug, and say “resting position.” Gently pick it up, say “jingle bell,” and then shake it gently in the air. Keep listening until the sound can no longer be heard and repeat the process twice more. Return the jingle bell to its place on the rug and invite the children to take turns. When finished, one child returns the jingle bell to its place on the shelf.



VARIATIONS

Tambourine

Gently pick it up by grasping the wooden side with thumb and four fingers of dominant hand, say “tambourine,” and then firmly tap the instrument against the side of the body. Keep listening until the sound can no longer be heard and repeat the process twice more. Return the tambourine, flat side down, to its place on the rug and invite the children to take turns. You may need to assist the children in using the correct grasp to pick up the tambourine. When finished, one child returns the tambourine to its place on the shelf.

Triangle

Using the left hand gently lift the triangle and suspend the instrument from the attached string. Lift the metal striker with the right hand and strike the edge of the triangle. Keep listening until the sound can no longer be heard and repeat the process twice more. Return the triangle to the rug and place the metal mallet to its right side and invite the children to take turns. When finished, one child replaces the triangle and metal striker to the case and returns it to its place on the shelf.

Xylophone

The xylophone is an excellent instrument to demonstrate pitch presentations.

—w— Pitched Instruments —w—

The piano or keyboard are members of the percussion family of instruments and are thus included in this section. Although a three-year-old enjoys the exploration of the keyboard and its basic principles, formal instruction is usually recommended for the slightly older child.

Keyboard

Set up a keyboard on a table that is placed against a wall in such a manner that the keyboard can only be viewed from the front. If an electrical outlet is used, ensure it is tucked away and safe from the inquisitive fingers of the child. The chair that is placed in front of the keyboard is at a height that enables the child to sit down, extend her hands at right angle from her body, and rest the hands on the keys.



Material: Keyboard
Purpose/Aim: Introduction to keyboard
 Demonstration of use of instrument



PRESENTATION

Sit down at keyboard with back straight and arms extended to rest curved fingers on keys. Show the children how to turn on the keyboard. Explain that there are many uses for keys, such as opening locks and starting cars. The keyboard keys make a sound when pushed down. Hold right hand in curved position and gently press any key with the middle finger. Now it is the child's turn. Ensure hand position is correct and show the children how to press every key on the keyboard. Start with the lowest note to the left of the keyboard, press gently with third finger and listen. Lift hand and move to the next note to the right and once again press with third finger. Continue to the last note and invite the children to take turns. When finished, turn off the keyboard and push in chair.



VARIATIONS

Finger strength

Continue to present all notes using different fingers and both hands.

Recognizing left from right

Establish right and left hand and the ability to differentiate between the two hands: The right hand usually plays the higher notes to the right of the keyboard, while the left hand plays the lower notes to the left.

Keyboard—White and Black Keys



Material: Keyboard

Purpose/Aim: Recognition of white keys and black keys
Introduction to “two” or “three” black keys



PRESENTATION

Demonstrate to the children the patterns of black keys on the keyboard by pointing to all the groups of three black notes and exaggerate skipping over each group of two black notes. Invite the children to point to each set of three black notes. Once mastered, invite the children to point to each set of two black notes.

Holding either hand in a curved position press a group of three black notes with three fingers and listen to the sound. Skip the group of two black notes to the right and press the next group of three. Continue this pattern up and down (left to right and back again) the keyboard and invite the children to do likewise.



VARIATIONS

Group recognition

Once recognition of groups is established randomly ask the children to play a group of three or two black notes.

Finger playing

When playing the piano each finger is designated a specific number. Introduce the right hand with thumb being finger no. 1 over to the pinky finger, which is no. 5. Introduce the left hand in a similar fashion with thumb being finger no. 1 through to pinky finger being no. 5. Once recognition of fingering is established ask the children to play a note on the keyboard using a specific finger of either hand. Ensure that the correct hand position is being used—elbow to knuckles are in a straight horizontal position with fingers relaxed and curved.

Improvisation

Encourage the children to create their own sounds by exploring the notes on the keyboard. They may be willing to share their composition with friends.

Playing by ear

Perhaps the children would like to play a familiar easy melody. Children often become entranced with this task especially when it is their sensitive period for learning.

—w— Bell Material —w—

Bell Material—Set Up

The bell is an excellent percussion instrument to demonstrate some of the following music concepts.

Using two different sets of bells, set up on a table or shelf which is placed against a wall in such a manner that the bells can only be viewed from the front. Choose sets of bells in two different colors and place one set in front of the other. I have chosen a white set of bells as the control set (they are never moved from the original correct set-up position and are placed at the back) and a blue set of bells placed in front that can be moved as necessary. Place a mallet with a firm rubber head and a damper to the right side of the bells.

Bell presentations begin with the auditory reinforcement of the musical scale played from left to right, lowest to highest. Play up the blue bells (left to right) and down the white bells (right to left). The scale sound produced should match the scale produced on a keyboard beginning on the note C and playing up to the right and back down to C.

If bells are marked underneath with pitch letters, the order is C–D–E–F–G–A–B–C from left to right.



Bell Material Terminology

- Bell–Bells are a dual chromatic set including single-color controls. The pitch runs from middle C to high C, including the sharps.
- Mallet—the object used to strike the bell (a firm rubber mallet head produces a pure sound)
- Damper—the object used to stop the tone of the bell

The children are to stand while playing the bells in order to keep the arm parallel to the floor while striking the bells. The educator may need to kneel when first presenting the bell material to the children.

Speaking is kept to a minimum in all presentations in order to allow the children to focus completely without distractions. It is of great importance during any bell presentation that the human voice does not intrude and divert the children's focus from the pure tone of the bells.

When introducing any musical concept, keep in mind the need to demonstrate lowest to highest, in preparation for music theory.

Bell Material—Carry a Bell

Material: Music bells
Purpose/Aim: Introduction to bell material
Carrying a bell



PRESENTATION

From the bell table select a blue bell by picking it up at the stem with the thumb, second, and third fingers of one hand, and immediately placing the palm of the other hand underneath the base of the bell. Turn around and walk toward the children, carefully carrying the bell. Gently place the bell on a table ensuring that no sound is made in the process. Gesture to the children that you are listening for sound and then shake your head to indicate there is no sound to be heard.

Return to the bell cabinet and select the mallet by picking it up with the thumb, second and third fingers of one hand, and immediately placing the palm of the other hand underneath the head of the mallet. Walk to the single bell and gently place the mallet on the table beside the bell. Say the word “mallet.”

Return to the bell cabinet and select the damper and hold it horizontally with the other hand. Strike the bell with the mallet, acknowledge the beautiful sound, and with the other hand stop the sound by lifting up the damper and pressing the felt end of the damper to the lower edge of the rim of the bell. Indicate to the children that you are listening for a sound and there is only silence. Repeat this process and invite the children to take turns. Ensure each child is holding the damper with the felt side facing upward.

Bell Material—Matching Pitch

Material: Music bells
Purpose/Aim: Matching bell pitches
 Development of pitch memory
 Development of inner hearing



PRESENTATION

Bell presentations begin with the auditory reinforcement of the musical scale played from left to right, lowest to highest. Play up the blue bells (left to right) and down the white bells (right to left). The scale sound produced should match the scale produced on a keyboard beginning on the note C and playing up to the right and back down to C. Using the first, fourth, and seventh blue bells, take the first bell and place it in front toward the right end of the bell setup. Place the fourth bell to the left of the bell just moved. Now place the seventh bell to the left of the second bell just moved (Fig. 9.1).



Figure 9.1. White Montessori bells with first, fourth, and seventh blue bells in front at right end.

Now proceed to present in a manner similar to any matching exercise. Using the white bells as the control, strike the lowest white bell first and then from the three bells in the front strike the bell to the left. Listen carefully and shake head to indicate that these sounds do not match. Once again, strike the white control bell, listen, strike another blue bell, listen, and shake head to indicate the two sounds do not match. Repeat this process with the last blue bell, and nod head to indicate yes when the sounds match. Take the matching blue bell with two hands and place carefully in front of the white space to the far left of the bell setup (Fig. 9.2). Repeat this process for the remaining fourth and seventh blue bells.

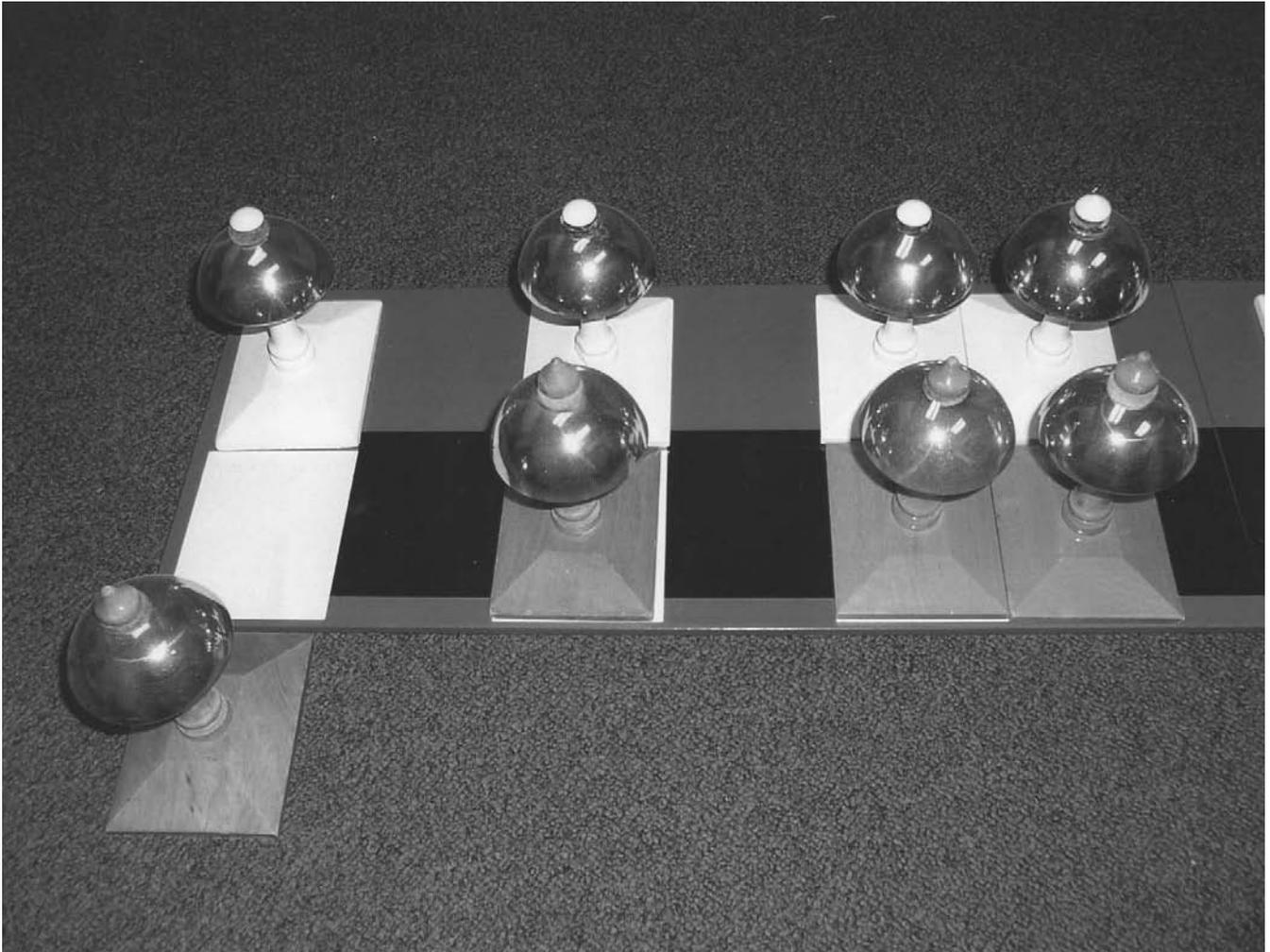


Figure 9.2. Blue bell placed in front of white space to far left of bell setup.

Now that the three blue bells are placed in front of their matching white bells, check each match by striking the white bell first and then the corresponding blue bell. Once the pitches match, place the blue bell onto its white space (Fig. 9.3). Once all bells have been returned to the original place, check once more by playing up the blue bells and down the white.



VARIATION

Increase the number of bells used.



Figure 9.3. Blue bell placed onto its white space.

Bell Material—Ascending and Descending



Material: Music bells
Purpose/Aim: Introduction to ascending scale
 Introduction to descending scale
 Development of listening skills
 Preparation for high and low sounds



PRESENTATION

After checking the bells, pause and slowly play from left to right the ascending scale on the blue bells. After each note, say “higher,” “higher,” etc. After playing the last bell return and play the scale once more saying when finished, “the sounds are getting higher while going up the scale.” Play the descending scale from right to left and say, “the sounds are getting lower while going down the scale.”



VARIATIONS

High and Low

The largest possible contrast in pitch is between the first bell—the lowest—and the seventh bell. The eighth bell is one octave higher (or first overtone) than the first bell and the pitch difference is not as easily heard. After checking the bells, move the two chosen bells out in front of their white spaces. Strike the low tone (furthest to the left) with the mallet, listen carefully, and then stop the tone with the damper. On the same pitch sing, “this is a low bell.” Now introduce the high bell and sing on the same pitch “this is a high bell.” Return the bells to their original position and place mallet and damper in their place to the side of the bell setup.

Grading

Play bells ascending and descending. Take the blue bells and move in front of bell setup in mixed formation. Play the first bell C of the white control bells and find its match in the blue bells. Place the matching C bell on its space. Now find the D bell using the same procedure. You are now ready to grade the remaining bells. Repeat this process until all bells are graded and returned to their place; verify the scale by playing up the scale and back down again. Play the blue bells to hear if they have been successfully graded.

Music and movement

Many games, dances, and songs lend themselves to demonstrating the ascending and descending patterns with body movements. For example, begin in a crouched down position and gradually lift the body until standing really tall and trying to touch the sky. Reverse the action and slowly descend down into a crouched position.

Bell Material—Major Scale

Material: Music bells
Purpose/Aim: Visual recognition of the scale



PRESENTATION

(1) Major scale recognition: Play the bells and ask the children to sing what they just heard using “la.” Strike the first bell and sing on the same pitch, “do.” Strike the second bell and sing on the same pitch “re.” Strike the third bell and sing on the same pitch “mi.” Sing one of the three pitches and ask the children which note did you sing, *do*, *re*, or *mi*? Continue until solfège for the complete scale is introduced. (2) Hand signs: Hand signs are introduced in a similar presentation as solfège (find a picture of the Curwen-Kodály hand signs at www.classicsforkids.com/teachers/training/handsigns.asp). The fist for low *do* is placed at the belly button position, and all other hand signs move upward from there. High *do* (the highest note) is shown using the hand sign above head. Continue demonstrating the specific hand sign for each pitch of the scale.



VARIATIONS

Descending scale

Present the above in descending order beginning with the highest note and grade pitch, moving down in descending order.

Scale memorization

Mix the bells on a table and place in a straight line. Take two bells and compare both. Take the lower sounding of the two bells and place to the left. Take another bell compare both. Take the lower sounding of the two bells and place to the left. Continue to the end of the line, and the last bell on the right should be the highest of all. Play all bells from left to right to verify the scale.

Movement games

Children line up according to the degree of the scale they represent. This is accomplished by either holding a bell and lining up according to the bell pitch placement in the scale, or holding specific pitch cards, or hand sign cards and lining up according to the specific scale placement of each card.

Bell Material—Chromatic Scale Pattern



Material: Music bells

Purpose/Aim: Introduction to chromatic scale



PRESENTATION

(1) Keyboard: Show the child how to play the chromatic scale on the keyboard by starting on the note C and playing all black and white notes through to the next C, explaining that each note is followed by the next closest sounding note. (2) Whole tones: The introduction of whole tones, semitones, and tetra chords, and so on, is introduced in the next level of Mozart and the Young Mind—for the elementary student. (2) Movement: One group of children represents the white keys on the keyboard, and another group of children represent the black keys on the keyboard. Line up three children from left to right (the white keys) and place footstools or overturned boxes in between each of the three children. Ask two children from the black key group to come forward and stand on the footstools. Continuing from left to right add five more children from the white key group and invite three children from the black key group to come forward. Bring attention to the placement of the three new footstools and place them between children on white keys 4 and 5, 5 and 6, and 6 and 7. Do not place a stepstool between white-key children 3 and 4, and white-key children 7 and 8. Invite the three children from the black-key group to stand on the footstools. Show the children that there is *no* footstool or child between numbers 3 and 4 and 7 and 8, just as it is on the keyboard. The black keys are arranged in groups of three and two leaving some of the white keys without any black keys in between. This is where the half tones, or semitones, lie; they are discussed in further depth in Mozart and the Young Mind—for the elementary student.

—w— Music Notation Material —w—

The music notation materials bring the child from the concrete to the abstract study of music and are the next step in the curriculum. This material is only introduced to the child after a solid foundation in the previous exercises is reached. The following materials can be produced by the classroom teacher or purchased from any music material supply company.

The Staff and Clefs



Materials: Staff boards, or five lines drawn
 Treble clef
 Bass clef
 5 discs numbered 1–5
 4 discs numbered 1–4

Purpose/Aim: Representation of the sounds heard on staff.



PRESENTATION

Introduce the staff as five lines and four spaces. Trace from left to right the bottom line, say "one" and place a no. 1 disc on the line. Trace the second line and place disc no. 2. Continue to the top line and use the same procedure to introduce the four spaces.

Place the treble clef on the table beside the green board and trace its shape with index finger. Invite the child to trace the shape and say "treble clef." Explain that this clef has a very specific place on the green board and place it so that the curved part of the bottom rests on the first line of the staff and the end of the curve rests on the second line of the staff.

Place bass clef (also known as the F Clef) on the table beside the green board and trace its shape. Invite the child to trace the shape and say "bass clef." Explain that this clef has a very specific place on the green board and place it so that the curved part of the top rests on the top fifth line of the staff and the end of the curve rests on the fourth line of the staff.



VARIATIONS

Drawing

Create workbooks for the children to practice tracing and drawing treble and bass clefs.

Movement

Create the staff on the floor or outside on the grass. Provide children with all the discs 1 through 5 and announce that when you call a line or space the child holding that specific numbered disc moves to the line or space it represents on the staff.



Figure 9.4. Staff board with treble clef and disc on g.

Note Names on Staff



Material: Music bells
8 discs with note names (C, D, E, F, G, A, B, C)
Treble clef

Purpose/Aim: Association of the staff note names and their relationship to the treble clef



PRESENTATION

Place the treble clef on the left side of the staff and place the E disc on the bottom line followed by the G, B, D, and on the top line F. Say to the children, “the lines of the treble clef staff are E, G, B, D, F.” Now place the remaining discs in the spaces and say “the spaces of the treble clef staff are F, A, C, E.”



VARIATIONS

Place the staff board in front of the bells and play up the white bells and down the blue bells. Place the treble clef on the left side of the staff board and then place middle C disc on the line just below the staff. Play the lowest bell C. Place the D disc in the space just below the staff and play the next bell D. Place the next discs E, F, G, A, B, and C on the staff and play the matching pitches.

Movement

Create the staff on the floor or outside on the grass. Provide children with discs E, G, B, D, F, and announce that when you call a letter the child holding that specific letter moves to the line it represents on the staff.

Provide children with discs F, A, C, E, and announce that when you call a letter the child holding that specific letter moves to the space it represents on the staff.

Provide children with all the discs A through G and announce that when you call a letter the child holding that specific letter moves to the line or space it represents on the staff.

Matching scale cards

Take one set of mixed scale cards and place vertically as for all other classified cards presentations (Figure 9.5). With another set, match each card by note placement on staff.

Movement

Eight children line up holding cards numbered 1 through 8. Children holding the scale cards match up with the child of the corresponding number. For example, the child holding the G card matches up with the child holding card number 5.

The same exercise using the bell pitches instead of the letters reinforces the aural representation of pitch recognition.

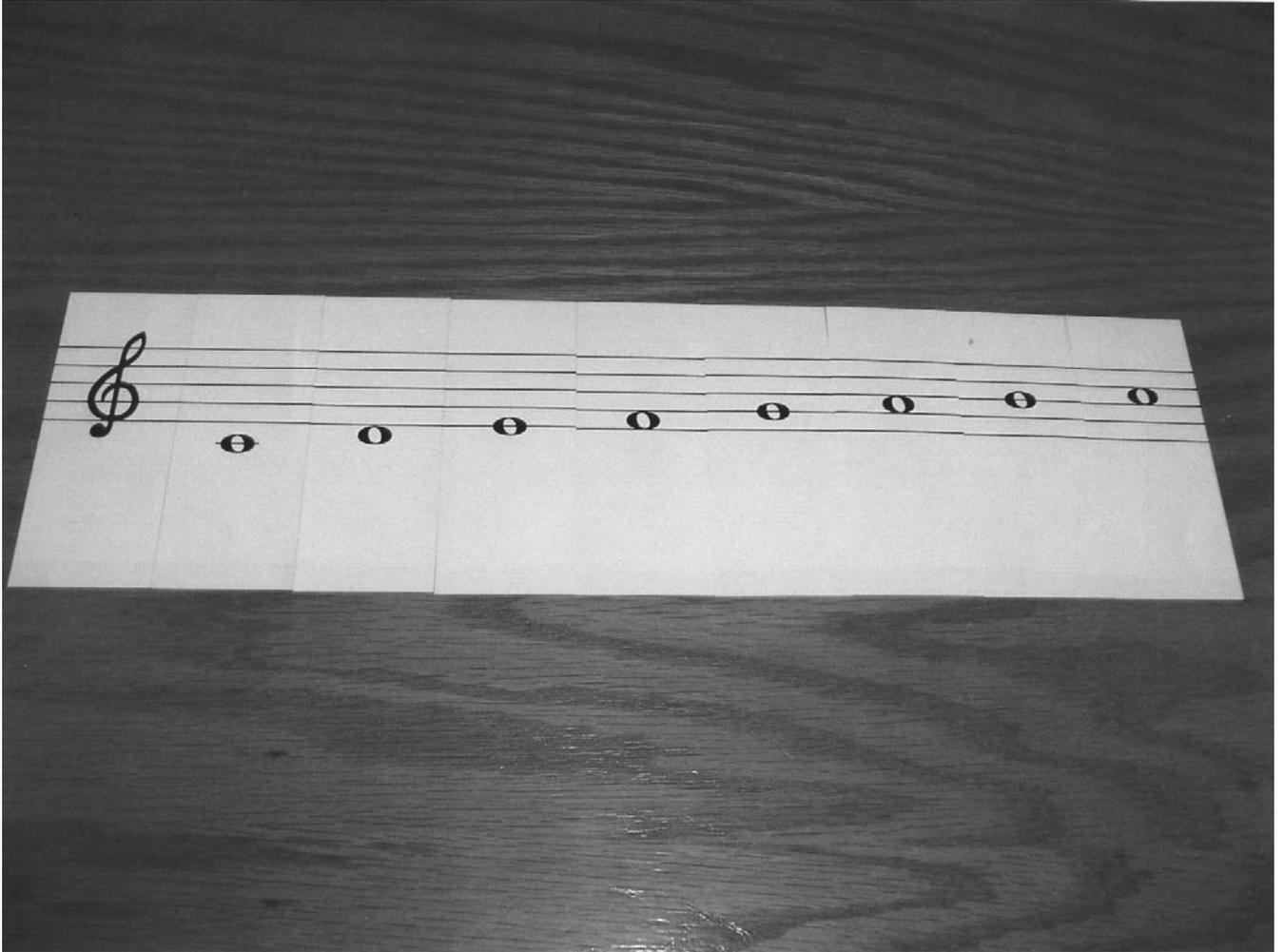


Figure 9.5. Scale flashcards.

Staff Note Names on Staff



Material: Music bells
8 discs with note names (C, D, E, F, G, A, B, C)
Bass clef

Purpose/Aim: Association of the staff note names and their relationship to the bass clef



PRESENTATION

Place the bass clef on the left side of the staff and place the G disc on the bottom line followed by the B, D, F on each succeeding line and on the top line A. Tell the children, “The lines of the bass clef staff are G, B, D, F, A.” Now place the remaining discs in the spaces in order and say, “The spaces of the bass clef staff are A, C, E, G.”



VARIATIONS

Place the staff board in front of the bells and play up the white bells and down the blue bells. Place the bass clef on the left side of the staff board and then place the C disc in the second space from the bottom of the staff. Play the lowest bell C. Place the D disc on the third line of the staff and play the next bell D. Continue to place the next discs E, F, G, A, B, and C on the staff with B sitting right above the top line, and middle C on a line just above the staff. Play the matching pitches game.

Movement

Create the staff on the floor or outside on the grass. Provide children with discs G, B, D, F, A, and announce that when you call a letter the child holding that specific letter moves to the line it represents on the staff.

Provide children with discs A, C, E, G, and announce that when you call a letter the child holding that specific letter moves to the space it represents on the staff.

Provide children with all the discs A through G, and announce that when you call a letter the child holding that specific letter moves to the line or space it represents on the staff.

Matching scale cards

Take one set of mixed cards and place vertically as for all card presentations (Figure 9.6). With the other set, match each card by note placement on staff.

Movement

Eight children line up holding cards numbered 1 through 8. Children holding the scale cards match up with the child of the corresponding number. For example, the child holding the G card matches up with the child holding card number 5.

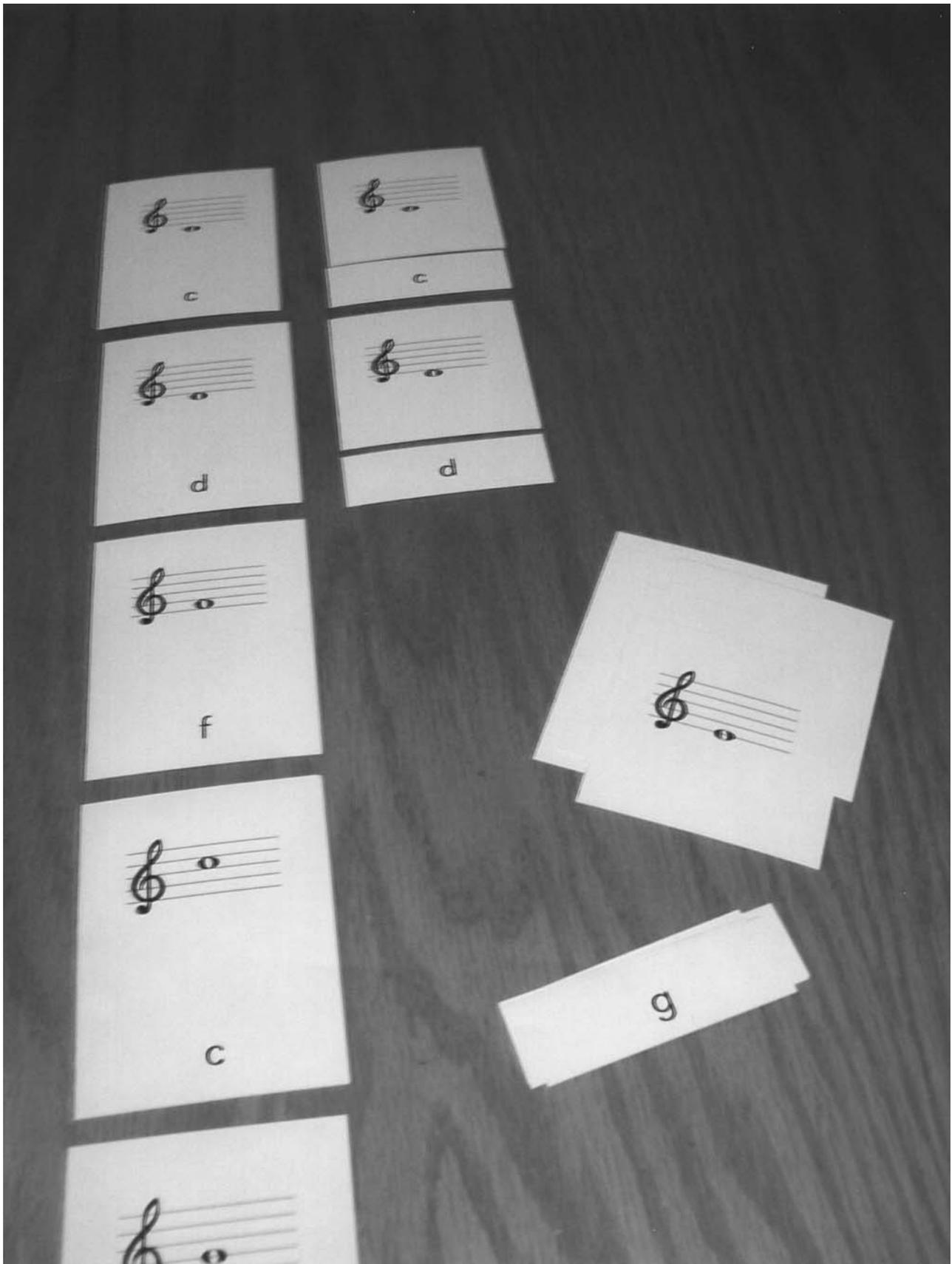


Figure 9.6. Scale flashcards arranged vertically

Note Values

Material: Music note cards
Purpose/Aim: Introduction to note values
 Music vocabulary



PRESENTATION

(1) From the music note cards, place the card representing the quarter note (solid black note with stem) on the table. Clap once and indicate one beat. Place the half note card (black note with white center with stem) on the table. Clap once and leaving hands together in a small motion move them forward away from body and back. Indicate two beats. Place the whole note card (black note with white center) on the table. Clap once and leaving hands together in a small motion move them forward away from the body, pulse three times, and return. Indicate four beats.

- Quarter note = 1 beat
- Half note = 2 beats
- Whole note = 4 beats

The clap counts as one of the beats followed by a pulse for the remaining beats.

(2) Rest Values: Present as above for the note values. Instead of clapping, hands are opened wide apart and pulsed for the required number of beats.



VARIATIONS

Repeating the music note value presentation above, introduce the name of the notes. For the rest values say “quarter note rest” for the one-beat rest, a “half note rest” for the two-beat rest, and a “whole note rest” for the four-beat rest.

Dynamics

Bring dynamic cards to the table and place the card for loud (*f*) on the table and say “forte” in a loud voice. Next take the card marked (*mf*) place on table and say “mezzoforte” in a moderately loud speaking voice. Take the card marked *p*, place on table, and say “piano” in a whispering voice. Continue to reinforce the musical dynamic vocabulary.

Movement

Children enjoy creatively moving to express note values and rests. Encourage the children to use their imaginations when working together musically.

—w— Creativity and Improvisation —w—

Creative Movement



Material: High-quality recordings or live musicians
Purpose/Aim: Introduce improvisation in music and movement



PRESENTATION

Creative movement is an enjoyable way for children to explore movement through music. It provides all children with a positive environment for the exploration of creative experiences, regardless of age, gender, race, or development stage. When a child responds to the sounds with motion, through swaying, clapping, or rocking from side to side, he is developing and exploring his innate creativity. Within this interactive environment and the use of props such as scarves, balloons, and feathers, the child learns to share space with his friends and subsequently develops higher levels of awareness of himself and others.

Sitting for extended periods of time may be difficult for some children and providing the child with opportunities for music and movement relieves stress and tension and a need to release energy.



Finally, I believe that the cultivation of mutual respect for oneself and others is of utmost importance to creating a peaceful civilization. Experiences in music and movement can help children learn to recognize, appreciate, and respect differences in the people they meet. They become more aware of themselves, more sensitive to others, and actively conscious of the world they share.

Above all, teachers' enjoyment of music should be abundantly clear. Music brings people together through shared experiences; it reminds us of special times and comforts us when we are sad, lonely, or remorseful. Melodies will bring to mind friends, family, and special memories. Music brings us pleasure and joy because it helps define who we are as people.

It is my hope that these suggestions will aid the early childhood educator in using creative movement to enhance the rhythm of the classroom.

The child is his own instrument. He can choreograph the ballet, direct the orchestra, be the dancer and the audience if we free him to play with the song, to have the song in him and lead him to explore it. Through movement and exploration of the song with his peers, the possibilities for growth are unlimited. He needs no other equipment than himself—not a piano nor a CD nor a computer. Each child can respond with his whole being—his brain, his body, his emotions, and he can interiorize all the sounds of the music and the language. He can sing all the wonderful, simple songs any time, anywhere. Nothing is needed to get him started but the child himself, a group of his peers, and you to lead him and show him the way.

—Mary Helen Richards (Education Through Music)

CHAPTER 10

Resource Guide

The following resource guide is intended to assist in the implementation of MYM into the classroom curriculum. It is by no means exhaustive and should be considered a starting point of resources to be added to throughout the teaching career. Daily musical experiences and ideas for further curriculum development may be documented and shared with fellow educators over time. It is these early musical experiences that are vitally important to the overall development of the “whole” child.

Music and Movement CDs

***Music for Little Mozarts* by Donna Brink Fox and Karen Farnum Surmani.** Beethoven bear and Mozart mouse teach singing, listening, music appreciation, movement, and rhythm activities to bring out the music in every young child. Alfred Publishing Co., Inc. P.O. Box 10003, CA, www.alfredpub.com.

Take Your Music Home. A collection of original and traditional songs that are exciting to learn and experience—familiar songs to build upon. Voice and piano by Claire Smock, produced by Phil Smock for Chasing Peace Productions, P.O. Box 405, Corning, NY 14830.

***The Cycle of Seasons* by Loran Heyge—Spring, Summer, Fall, and Winter.** The CD, cards, and booklet offer a collection of songs and sounds, poetry, and stories with additional ideas for both parent and child to explore. MusikGarten, produced by Music Matters, 1-800-216-6864, www.musikgarten.org.

Many Voices One Song: The Songs of ETM. One hundred and one songs from American folk literature with their traditional and Education Through Music (ETM) games. Songs of ETM, compiled by Mary Helen Richards, Richards Institute, California, www.richardsinstitute.org.

MUSICAL STORIES FOR CHILDREN ON AUDIO CD

The Children’s Group *Classical Kids* series (www.childrensgroup.com):

Mr. Bach Comes to Call
Beethoven Lives Upstairs
Hallelujah Handel
Tchaikovsky Discovers America
Mozart’s Magic Fantasy
Vivaldi’s Ring of Mystery

Audio CDs for the following stories can also be found:

Peter and the Wolf and *Cinderella* (Prokofiev)
Swan Lake, *The Nutcracker*, and *Sleeping Beauty* (Tchaikovsky)
The Magic Flute (Mozart)
The Sorcerer’s Apprentice (Dukas)
Ferdinand & Friends (with music from a variety of composers)

Children's Books

- The Amazing Pop-Up Music Book* by Kate Petty and Jenny Maizels—working keyboard, sections on rhythm, notes, time signatures, staff, scales, and harmony (New York: Penguin Group, 1999).
- Anatole and the Piano* by Eve Titus—Piano playing mouse in France (New York: Random House, Bantam Books, 1990).
- The Bat Boy and His Violin* by Gavin Curtis—Illustrated tale of a young violinist and a baseball team (New York: Aladdin Publishing, Simon & Schuster, 2001).
- Bramble Brown Bear & His Twinkle Adventure* by Kathryn Merrill—Little bear's adventure (Dayton, OH: October Press, 1999).
- The Cello of Mr. O* by Jane Cutler—A story about a persistent cellist in a war-torn village (New York: Puffin Publishers, Penguin Books, 2004).
- I Can Play My Violin As Well As Jeremy Can* by Margaret Keith—Young student begins playing the violin (Athens, OH: Ability Development, 1983).
- In the Land of Staff—The Magical Beginning*, vol. 1, 2, 3, by Paula Walker (New York: Warner Brothers Publications, Inc.).
- Meet the Orchestra* by Ann Hayes—Children's picture book features animal orchestra (New York: HarperCollins, Voyager Books, 1995).
- The Mozart Season* by Virginia Euwer Wolff—a young musician prepares for a competition (New York: Scholastic Paperbacks, 2001).
- The Music Pack* by Ron Van Der Meer and Michael Berkeley. A three-dimensional tour through the creation of music over the centuries (requires parent supervision) (New York: Random House, A. Knopf, Inc., 1994).
- Stories of Composers for Young Musicians and More Stories of Composers for Young Musicians* by Catherine Wolff Kendall—Inspiring biographies of composers, including those featured in Suzuki repertoire (Edwardsville, IL: Toadwood Publishing, 1985).
- Twinkle Twinkle*, a Goldenbook-Sounds story (New York: Random House, Golden Books, 1994).
- When Can I Clap, Daddy?* by Margaret Keith—Child's guide to attending an orchestra concert (Tucson, AZ: Southwood Strings).
- Yang the Youngest and His Terrible Ear* by Lensey Namioka—Trials of a young beginning musician (New York: Yearling, Random House, 1994).

Books by Maria Montessori

- The Secret of Childhood* by Maria Montessori (New York: Ballantine Books, 1982).
- The Absorbent Mind* by Maria Montessori (New York: Dell Publishing, 1967).
- The Montessori Method* by Maria Montessori (New York: Schocken, 1964).
- The Discovery of the Child* by Maria Montessori (Thiruvanimiyur, Madras: Kalashetra Publications, 1948).
- From Childhood to Adolescence* (2nd ed.) by Maria Montessori (New York: Schocken, 1948).
- Child Education: Lectures Delivered on All-India Radio*. (Adyar, Madras, India: Kalakshetra Publications, 1948).
- Spontaneous Activity in Education* (Vol. 1) by Maria Montessori (New York: Schocken, 1916).

Music Centre

There are hundreds of classical pieces for children to listen to. However, the following are a few of my favorites.

- Bach, Johann Sebastian: Brandenburg Concertos nos. 1, 2, and 3.
- Beethoven, Ludwig van: Symphony no. 6, op. 63 (*Pastoral*). Symphony no. 9 in D Minor, op. 125, "Choral," second and fourth movements ("Ode to Joy").
- Britten, Benjamin: *The Young Person's Guide to the Orchestra*.
- Copland, Aaron: *Appalachian Spring*, *Fanfare for the Common Man*, "El Salón México," and "Danzón Cubano."
- Debussy, Claude: *Children's Corner Suite*: "Jimbo's Lullaby," "Golliwog's Cakewalk," "The Snow Is Dancing," *La Mer*, "Play of the Waves," "Dialogue of the Wind and the Sea."
- Grieg, Edvard: *Peer Gynt Suite No. 1*: "Anitra's Dance," "Morning," "Ase's Death," and "In the Hall of the Mountain King."

- Holst, Gustav: *The Planets Suite*. “Mars” and “Jupiter.”
- Kodály, Zoltán: *Háry János Suite*. “The Viennese Musical Clock.”
- Mozart, Wolfgang Amadeus: Symphony no. 40, first movement; Symphony no. 41, “Jupiter,” *Eine Kleine Nachtmusik*.
- Pachelbel, Johann: Canon in D, organ works and choral selections (Meditations on Pachelbel’s Canon, Six Degrees Recordings, CA, 1999).
- Prokofiev, Sergei: *Peter & The Wolf*, *Romeo and Juliet* ballet suite.
- Rimsky-Korsakov, Nicholas: *Tsar Sulta*, “Flight of the Bumblebee.”
- Saint-Saens, Camille: Symphony no. 3, *Carnival of the Animals* (Symphony no. 3 in C-, Opus 78 Adagio—Organ Lullaby).
- Schumann, Robert: *Album for the Young*, Book 1: “The Happy Farmer,” “Soldier’s March,” “The Wild Horseman”; *Scenes from Childhood*.
- Stravinsky, Igor: *The Firebird*: “Berceuse,” “Infernal Dance”; *The Rite of Spring* (watch and listen to this music on Walt Disney’s *Fantasia*).
- Tchaikovsky, Peter: *The Nutcracker*, *1812 Overture*, *Sleeping Beauty*, *Swan Lake*, and *Romeo and Juliet*.
- Villa-Lobos, Heitor: *Bachianas Brasileiras* no. 2: “The Little Train of the Caipira”
- Vivaldi, Antonio Lucio: *Four Seasons*.
- Wagner, Richard: *Die Walkure*: “Ride of the Valkyries.”

World Music

Aniruddah D. Patel and Laura-Lee Balkwill compiled a collection of world music to use in their auditory perception experiments, which was featured on the Australian radio program *All in the Mind* on ABC Radio National. The program “Is Music the Universal Language” aired May 5, 2007. A detailed listing of their compilation can be found on the All in the Mind website (www.abc.net.au/rn/allinthemind/).

Books with Music Activities for Children

- Mommy, Can We Practice Now?* by Marie Parkinson—Games and activities to enrich practice time (New Albany, IN: M&M Publications, World-Wide Press, 1981).
- No H in Snake*: Music theory for children by Michiko Yurko—Music games and ideas for teaching theory (Sherman Oaks, CA: Alfred Publishing Co., 1979).

Related Teacher Topics

- Classical Music for Everybody* by Dhun Sethna—A listener’s guide (Fitzwilliam Press, 1997).
- Dare to Discipline* by Dr James Dobson—For parents and teachers, a healthy approach to discipline (New York: Random House, Bantam Books, 1996).
- Everybody Wins* by Jeffrey Sobel—Non-competitive games for children (New York: Walker & Co., 1993).
- The Inner Game of Music* by B. Green and T. Gallway—Sports principles applied to music (New York: Random House, Doubleday Publishing Group, 1986).
- The Mind’s Ear* by Bruce Adolphe—Exercises for improving the musical imagination for performers, listeners, and composers (MMB Music, 1991).
- Musical Prodigies* by Claude Kenneson—Perilous journeys, remarkable lives (New York: Amadeus Press, 1999).
- The New Pre Twinkle Book* by Kathryn Merrill and Jean Brandt—words to early Suzuki pieces (Dayton, OH: October Press, 1980).
- The NPR Classical Music Companion* by Miles Hoffman—terms and concepts from A to Z (MA: Mariner Books, 1997).
- Stage Fright* by K. Havas—aspects of stage fright with specific exercises (London, England: Bosworth & Company, 1973).
- Teaching Genius* by Barbara Sand—Dorothy Delay and the making of a musician (New York: Amadeus Press, 2003).
- A Young Musician’s Guide* by Amy Nathan—advice for young musicians from other students and professionals (New York: Oxford University Press, 2000).

Your Child's Self-Esteem by Dorothy Corkille Briggs—Step-by-step guidelines for raising responsible, productive, happy children (TN: Main Street Books, 1975).

Research Reading

- American Association of Colleges for Teacher Education (AACTE) (2002). *The community college role in teacher education: A case for collaboration*. AACTE issue paper prepared by A. M. Schuhmann. Washington, DC: AACTE.
- Beckman, P. J. (1996). *Strategies for working with families of young children with disabilities*. Baltimore, MD: Brookes.
- Center for the Child Care Workforce. (1993). *The national child care staffing study revisited: Four years in the life of center-based child care*. Washington, DC.: <http://www.ccw.org/pubs/nccsrevisit.pdf>
- Forrai, K., (1988). *Music in preschool*. Budapest, Hungary: Corvina Press, 33.
- Ferierabend, J. (1996, Fall). Music and movement for infants and toddlers: Naturally wonder-full. *Early Childhood Connections*, 2(4), 21.
- Gregory, E., ed. (1997). *One child, many worlds: Early learning in multicultural communities*. New York: Teachers College Press.
- Kodály, Z. (1974). *The selected writings of Zoltán Kodály*. London: Boosey and Hawkes, 129.
- Levin, D. E. (2003). *Teaching young children in violent times: Building a peaceable classroom*, second ed. Cambridge, MA and Washington DC: Educators for Social Responsibility.
- Mead, V. (1994). *Dalcroze eurhythmics in today's music classroom*. New York: Schott.
- Sacks, O. (2007). *Musicophilia*. New York: Alfred A. Knopf.
- Warner, B. (1991). *Orff-Schulwerk: Applications for the classroom*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Trollinger, V. L. (2007). Pediatric vocal development and voice science: Implications for teaching singing. *General Music Today, Spring*, 19–25.
- Wolery, M., and Wilbers, J.S., ed. (1994). *Including children with special needs in early childhood programs*. Washington DC: NAEYC.

Websites—General

African-American Sheet Music, 1850–1920

<http://memory.loc.gov/ammem/award97/rpbhtml/>

A collection of 1,305 pieces of African-American sheet music dating from 1850 through 1920.

All Music Guide

<http://www.allmusic.com/>

An online database of recorded music with a search engine that allows searching by artist name, album title, song title, label, and musical style.

American Music Resource

<http://www.amrhome.net>

This collection is indexed by topic or subject-name and contains bibliographies, lists, and text files about all styles of American music and related issues.

Center for Black Music Research

<http://www.colum.edu/cbmr/>

This site includes definitions of different styles and genres, such as blues, jazz, and Afro-Caribbean styles.

The Ceolas Celtic Music Archive

<http://www.ceolas.org/ceolas.html>

Information about Celtic/Irish music, artists, and Celtic instruments.

Choral Public Domain Library

http://www.cpdl.org/wiki/index.php/Main_Page

A large collection of free choral sheet music. Search by title or composer, or browse in the following categories: chant, medieval, renaissance, baroque, classical, romantic, early twentieth century, or modern.

Classical Music Home Page

<http://www.classical.net/music/>

Sections of this site include Basic Repertoire List, Classical CD Buying Guide, Recommended Recordings, and Composer Data.

Composer Biographies

<http://www.cl.cam.ac.uk/users/mn200/music/composers.html>

A site of brief biographical sketches of some of the more well-known classical composers.

Dr. Estrella's Incredibly Abridged Dictionary of Composers

<http://www.stevenestrella.com/composers/index.html>

Organized by musical period and by composer name, this site includes entries that are linked to biographical essays and other sites on the Web.

8notes.com

<http://www.8notes.com/>

Categorized by instrument and musical styles, this site provides an extensive collection of free, downloadable sheet music and lessons.

Eric's Treasure Trove of Music

<http://www.ericweisstein.com/encyclopedias/music/>

Contains detailed articles that explain concepts in music theory.

Essentials of Music

<http://www.essentialsofmusic.com/>

Basic information about classical music including composer biographies and an overview of the main periods in western music.

Etext Center—Negro Spirituals

<http://etext.lib.virginia.edu/toc/modeng/public/HigSpir.html>

These spirituals were originally collected by Thomas Wentworth Higginson (1823–1911).

Folk Alley

<http://www.folkalley.com/>

This online radio station plays only folk, world, and acoustic music.

A Guide to Medieval and Renaissance Instruments

<http://www.music.iastate.edu/antiqua/instrumt.html>

This site showcases Musica Antiqua's large replica instrument collection by supplying photos, descriptions, original quotes, additional sources, and sounds of the instruments used in performing early music.

Huapala: Hawaiian Music and Hula Archive

<http://huapala.org>

An extensive collection of traditional Hawaiian song, dance, and tradition.

Max Hunter Folk Song Collection

<http://maxhunter.missouristate.edu/>

This large collection of Ozark Mountain folk songs is available as printed lyrics or in audio format.

MHN Instrument Encyclopedia

<http://www.si.umich.edu/chico/instrument/>

An instrument encyclopedia (searchable by name, geographic region, building materials used, etc.) provides users with instrument images, textual descriptions, and sound files.

The Mozart Project

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

Contains a biography of Mozart, reviews of books on Mozart, and links to more Mozart resources online.

MPA Copyright Search Resource Guide

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

A guide to databases that may help you find music copyright information.

Music Notes

<http://library.thinkquest.org/15413/>

This website covers many aspects of music, including music theory and history, musical styles, music professions, musical instruments, and a glossary of musical terms. Interactive games allow you to test your music knowledge.

MusicSearch

<http://www.musicsearch.com/>

A large, searchable directory of music-related Internet sites, with descriptions provided by the sites.

National Literacy Trust

<http://www.literacytrust.org.uk/readingconnects/index.html>

This website holds resources and information on initiatives to promote reading for pleasure and a reading culture in schools.

Sheet Music from Canada's Past

<http://www.collectionscanada.gc.ca/sheetmusic/>

Selected from the historical collection of the National Library of Canada, this site provides scores that can be searched or browsed, and are downloadable in Adobe Acrobat (PDF) format.

The Symphony: An Interactive Guide

<http://library.thinkquest.org/22673/index.html>

The site features a timeline showing musical events in their historical context, an explanation of musical forms and structures, and a complete guide to the instruments of the orchestra. A glossary of related terms is also included.

Websites—Glossaries of Education Terms

<http://www.edweek.org/context/glossary/>

<http://www.ncrel.org/sdrs/areas/misc/glossary.htm>

<http://www.nclb.gov/start/glossary/>

Websites—Learning Styles

LdPride website has a visual/auditory/kinesthetic test: www.ldpride.net/learning_style.html

Ageless Learner website: www.agelesslearner.com/assess/learningstyle.html

Keirse.com website: www.keirse.com/

Middle Tennessee State University page on right/left brain dominance: www.mtsu.edu/~studskl/hd/learn.html

University of Jyväskylä (Finland) webpage on analytical vs. global learning style: http://kielikompassi.jyu.fi/omatila/tila/eng/reflect_learning_styles_global_worksheet.shtml

The Center for New Discoveries in Learning webpage on Learning Style Inventory: www.howtolearn.com/freelearningstylesinventory.html

Websites—Organizations

American Alliance for Health, Physical Education, Recreation, and Dance: www.aahperd.org

American Associate Degree Early Childhood Educators: www.accessece.org

Center on the Social and Emotional Foundations for Early Learning: <http://csefel.uiuc.edu>

CEO Forum on Education and Technology, self-assessment tool for teacher preparation: www.ceoforum.org

Children and Computers: www.childrenandcomputers.com

Council for Exceptional Children: www.cec.sped.org

MENC: The National Association for Music Education: www.menc.org

National Association for the Education of Young Children (NAEYC): www.naeyc.org

National Center on Education and the Economy: www.ncee.org

ZERO TO THREE, National Center for Infants, Toddlers and Families: www.zerotothree.org

Websites—Partnerships

Arts Education Partnership: www.aep-arts.org,

Community Arts and Education Collaborations, Online Help: <http://www.umass.edu/aes/learningpartners/index.html>

For the Greater Good: Frameworks for Advancing State Arts Education Partnerships: http://nasaa-arts.org/nasaanews/al_partners.htm

New Horizons for Learning—A colorful and informative website covering a wealth of information: www.newhorizons.com

Mr. Holland's Opus Foundation—Provides musical instruments and support to schools in need: www.mhopus.org

Meet the Composer—The goal is to bring music to rural communities and urban neighborhoods: www.meetthecomposer.org

CHAPTER 11

Let's Get Started

How to Begin

Once the educator is familiar with the songs and is comfortable demonstrating the music and movement activities, it is now time to get started—to decide on the environment and plan the music sessions.

The environment provides the children with a sense of belonging and security, promotes healthy practices, and is free from pollution, physical hazards, violence, and fear. It should also exhibit respect, tolerance, and acceptance of all forms of diversity by providing opportunities for participation and engagement of families with diverse characteristics.

Deciding on location requires careful consideration as to the kind of instruction used daily and providing an environment to facilitate children's musical growth. This includes consideration of the broader aspect of music and movement, which is a spacious room to accommodate the freedom of movement, storage requirements (instruments, CDs, and paperwork), and areas for listening to music, improvising, composing, singing, and playing. In general, a large spacious, carpeted room with open space free of obstacles is preferred.

FINDING AND EQUIPPING A SPACE

The ideal venue is a music room where the environment is prepared specifically with the safety and musical needs of the young child. Of utmost importance is student safety. Careful attention should be given to childproofing the music room, such as protecting active children from items such as corners of desks, sliding floor coverings, dangling chords from window blinds, and electrical outlets, to name but a few. Removing any hazardous materials, such as small objects that can be swallowed, pebbles tracked into the room, beanbags with old seams, and wooden percussion instruments with splinters is required. The inquisitive exploring hands of the small child will roam and fit into the most unexpected places, and it is the responsibility of the educator to ensure that all safety standards are met before beginning any music program. For more detailed information, contact your local early childhood organizations for information on local and national standards. In many locations, a license is required to operate any early childhood program and is provided only after inspection to verify that standards are met.

Early childhood music classes can also take place in a private setting, and the rules of running a business would prevail in this case. There are excellent resources on how to start up a new business that are available to the first-time business entrepreneur. Consider registration fees based on expenses such as rental fees, advertising, teaching fees, and materials for the program—including musical instruments, etc.—and consult an accountant and insurance broker to help with keeping track of business expenses and for coverage for accidents and music materials. A filing cabinet for music books and paperwork is also useful.

The online journal of the National Association for the Education of Young Children (NAEYC, 2004), *Young Children*, recommends getting the movement curriculum off to a good start by stocking up on the following equipment—balance beams, balls, bats, beanbags, carpet squares, cones, foam bowling pins, hoops, jump ropes, punchball balloons, and target boards—all which provide a safe environment for movement activities. The NAEYC website also provides suggestions for setting up the classroom and appropriate placement of large props in relation to other uses for the room, such as lunch, plays, or music activities.

INDIVIDUAL OR GROUP LESSONS

Having taught children from the age of 18 months through to formal instruction with the older child, I've learned that young children prefer to be engaged in fun music and movement classes with their peers. Young children prefer to move and explore, sing and dance. There are exceptions, of course, for example, three-year-olds who play violin or piano, but for the majority of children, particularly those in a school setting, the group lesson is the most often used. When planning these lessons, careful consideration should be given to including opportunities for both group and individual instruction, as children need time to reflect on the knowledge acquired during the lesson. Through repetition, problem solving, and discussions about the musical experience, children reach a stage of musical understanding.

ADVERTISING

Advertising may become quite costly, and careful thought should be given to where to advertise and what is the most beneficial form of advertising. Advertising in local newspapers, church bulletins, libraries, and schools will recruit children and caregivers, while radio and television interviews provide a free-of-charge means of advertising. However, it is word of mouth after the first music session that will provide the greatest return and is without doubt the most successful means of advertising.

FAMILY ORIENTATION

The caregiver and educator share the responsibility of ensuring optimum learning conditions for the child, and this begins with the development of a positive and supportive relationship. An orientation meeting with caregivers before the first music class is an excellent venue for providing helpful information as to what may be expected in the classes. Depending upon the caregivers' involvement, they will need to wear comfortable clothing when attending the orientation and know where to park. During the meeting, reinforce school policy regarding foods and allergies, bringing toys from home, fire and safety procedures, as well as policies regarding payment, missed classes, sickness, and other issues. It is advisable to communicate these details on paper and distribute copies to everyone attending the meeting. A mock music lesson with the caregivers—or description, or videotape of an actual lesson—can assist in communicating what to expect and what not to expect from a young child. Also, this is an excellent time to have parents sign consent forms to permit videotaping of the class and the children's responses.

PLANNING MUSIC SESSIONS

When working with young children in a private setting, it is best to keep numbers low—perhaps working with ten to twelve children at a time—and each child will need an adult with him. These classes are usually 20–30 minutes in length, perhaps twice weekly, and run for a period of eight to ten weeks. The children are usually divided into age-appropriate groupings.

However, if the music program takes place in an early childhood program setting, the group is usually larger, and an assisting adult is advisable. The educator must *always* be in a position where all the children are visible. Multiage groupings work well in these situations, and the educator has the opportunity to schedule the music sessions daily and at a flexible time that is convenient to the particular day's schedule. With multiage groups, older children take great delight in pairing off with a younger child, and the younger child enjoys the one-to-one attention.

Keeping in mind that young children learn by observing and participating in repetitive and varied activities, this curriculum design includes the following:

- How to develop a repertoire of songs
- How to introduce basic music concepts through music and movement
- How to introduce world music and cultural appreciation
- A timeline of composers and musical forms
- How to introduce percussion instruments

- How to introduce the instruments of the orchestra
- How to introduce musical bells
- How to teach improvisation and composing
- How to introduce music symbols and notation

This developmentally appropriate music curriculum is flexible enough to accommodate the diverse interests and multicultural learning styles of the young child, and this method of independent learning places the educator as facilitator and co-learner with the freedom to expand and include learning for all children. It builds upon the widely accepted standards set forth for educating the young child (NAEYC, 2004), maintains respect and recognition of the individual, and is taught in a friendly, flexible manner with opportunities for multicultural creativity and exploration (Harris, 2005).

Following the step-by-step curriculum guide in chapters 8 and 9, teachers can run the beginning early childhood music and movement classes smoothly. The accompanying CD provides the basic melody, pitch, and rhythm for all the songs in the text and provides the new music educator with the tools to teach with confidence. For the more experienced educator, this guide can be expanded based on the children's music and movement responses. Over time, it is the flexibility of this curriculum that sets it aside from instruction that is more traditional. Inexperienced educators can follow closely the detailed lesson plans with ease; and use them to gain confidence in their abilities to spontaneously respond and improvise depending on the children's activities. It is this musical confidence and response that provide the springboard for exhilarating future music experiences between educator and child.

Tricks of the Trade

Now that the environment for teaching music is prepared, and the educator is confidently following the step-by-step Mozart and the Young Mind curriculum detailed in chapters 8 and 9, I want to share some practical and commonsense suggestions acquired from many years of experience teaching the young child.

In a typical early childhood classroom, parents leave the child with the educator. The child settles into the routine, becomes comfortable with the surrounding environment and friends, and adapts easily to the routine. Some children find transition times difficult; moving from one room to another, or going outside or to the music room may become stressful to them. Seeing a familiar face (the classroom teacher or assistant) throughout the process can ease the transition, especially if a music specialist is working with the children and lessons take place in the music room.

A quality audio system that can be heard clearly around the room should be placed out of the reach of the children, while an individual listening area off to the side can accommodate the older children working on independent projects. The use of puppets to dramatize a musical story or text of a song are helpful tools in engaging the young child and act as visual props. Some children are not comfortable holding hands in group settings, and using a stretchable ribbon or Hula-hoop for everyone to grasp may alleviate unnecessary anxiety for the shyer child. Scarves and streamers used for demonstrating phrasing and form are excellent props to use with the child who is not comfortable with movement activities.

Class control is rarely a problem if the educator is prepared, knows the children, anticipates behavior, is flexible, and keeps the lesson FUN! From the moment the educator decides it is now time for music, a positive attitude prevails. Announce to the children with a smile and excitable voice, "Children, we are now going to do something really special. [*pause*] It is time for music. Let's tidy up and come together." The teacher now sits on the floor quietly singing, beckoning to the children to join her, while the assistant helps those children in need. Usually the children are curious as to what the teacher is doing and attracted to the sound of the beautiful soft singing, and without any reminders, they will come unescorted and sit down with her. Eventually any stragglers, seeing their friends sitting, will join the group out of curiosity—the educator has simply sat and sung all the while. Facial expressions are also important, making eye contact with the children while continuously smiling and patting the floor beside you gives direction as to the expected behavior to come and sit down.

Choosing a leader, someone who demonstrates the movement actions to particular songs, assists in including the child who is not listening or acting inappropriately during class. The insecure and introverted child responds well to sitting close to a friend, while the busy, extroverted child may need to sit opposite that special friend.

Flexibility in the teachers' direction can also offset behavioral issues. No matter what the lesson plan is for the day, if for whatever reason the children are being distracted, simply do something different. If all are sitting, stand and say, "Let's now stand and sing 'Going to Kentucky.' This is such a fun song. Who is going to be the leader for this song?" If a movement

song is getting a little out of hand, turn off the music, sit down, and whisper, “This is my favorite song. Come join me in singing ‘Open, Shut Them,’” and immediately begin singing in a soft voice. Once again, the child is mesmerized by the pure sound of the human voice, and when singing quietly, it brings down the volume of noise in the room as the children stop to listen. Without any shouting or clapping on the part of the educator, the students have now returned to a sitting position and are listening intently to the song. The teacher has regained the attention of the group and can immediately move on to the next step in the lesson.

Keeping the children engaged and participating in a fun manner is the best method to offset silly behavior for young children who developmentally need to explore their surrounding environment. They are wonderful students to work with since their enthusiasm for learning and newness is endless, and it is the duty of the educator to make all these first experiences positive. To do so, continuing the lessons in a fun manner keeps the child engaged, and the research clearly shows that children who are engaged perform at higher levels (Harris, 2006; Uptis et al., 2001). For some children, their only exposure to music may lie in the hands of the educator, and experiences at such a young age have a profound effect on future development. Children who are happy and having fun enjoy learning, and discipline problems remain at a minimum.

Percussion instruments are so interesting to children that quite often they want to use them all or show preference for the instrument the child sitting next to them is using. As discussed in chapter 9, correct use of each instrument is demonstrated and practiced, and when ready, the children take turns using all the instruments. Place an instrument on the floor in front of each of the children, reminding them to leave the instruments in resting position. If a child picks up the instrument, simply turn and say, “the instruments remain in resting position until all of us are ready to use them. Do you need my help or can you return it to resting position yourself?” To give the children as many opportunities as possible to explore the instruments, pause the music between each verse of a song, ask the children to pass their instrument to the child beside them. (This takes a little time in the beginning, and the educator will need to show the child how to pass the instrument to the child on the *right*.) Once the children are used to passing the instruments around the circle, they will anticipate the action as soon as the educator stops the music and will be content to know that they will eventually have a turn using their instruments of choice. Those children using an instrument incorrectly respond well to having another child demonstrate the correct use and, in turn, that child enjoys the opportunity to help a friend.

I would like to add some thoughts on performances and concerts for the young child. Educators may feel a level of expectation from administrators, caregivers, or peer teachers to demonstrate the accomplishments of the children through recitals or performances. With children so young, their development of musical understanding cannot be measured by musicianship displayed during a performance. These children may not have the developmental maturity to perform, not to mention being observed by a large group of adults, and to deliver the expected behavior of such entertainment. It is possible to send home subjective evaluations regularly that focus on how much the child has advanced musically during the semester, or you might prefer to invite the caregivers or administrators to attend the music class and quietly observe the children’s musical development, which will produce a much more accurate assessment. Most important, the children will continue to enjoy the music class without fear of judgment or expectations on the part of others.

Finally, each group of children will bring its own uniqueness to the classes, and what may work well with one group may not work with another. However, after the first few lessons, all in the class—including the educator—will become more comfortable with each other. Keeping a wide range of material to present, an open mind, a sense of humor, and flexible lesson plans will create wonderful opportunities for musical exploration for all.

The Educator

Considerable time and effort will bring the music class from initial conception to a blossoming, successful musical experience for all involved, and crucial to this success is the educator who provides the instruction. There are countless stories of incredible musical experiences evolving from some of the disadvantaged communities around the world and educators who have made significant contributions in less than ideal circumstances. A public speaker, church leader, salesperson, educator, or politician who speaks with confidence, passion, and knowledge of the subject at hand makes a great impact on his audience. Similarly, the effectiveness of the music instruction depends upon the educator’s passion, knowledge, competence in the subject matter, and comfort level of his own musicianship.

The child’s psychological safety demands that the overall environment instills a sense of belonging and well-being for each child, and the educator is the key to this success. Knowledge of child development and learning, the ability to communicate effectively with children and family, and demonstrating a caring, sensitive, and empathetic nature are critical charac-

teristics for the educator. It is also important that the educator be able to understand and implement an effective program, use a variety of learning materials, and have the ability to reflect on his/her practice and make any appropriate changes.

The Mozart and the Young Mind curriculum provides the educator with every possible support and guidance to build confidence in the teaching of music and also provides the auditory tools upon which to develop musical skills. For those educators who are passionate about teaching music and have many years of experience, this program offers a fresh, new perspective with considerable flexibility to accommodate the educator's teaching style and the children's many learning styles.

CHAPTER 12

Tomorrow's World

It is widely believed that vibrant economies are driven by innovation, and that innovation, in turn, can be taught and nurtured in schools. What are the most effective educational strategies to promote this ability? What is the relationship between education for innovation and national competitiveness or economic development? And what opportunities exist for international cooperation or collaboration to achieve innovative societies? These are just a few of today's critically important issues related to education and its role in creating innovative societies for tomorrow. Where does the path begin and to what extent will these educational strategies effectively promote global collaboration and a more sustainable, equitable, and caring world?

Early Childhood Is Key

Once again, we must return to the young child, without whom tomorrow's world ceases to exist. The importance of nurturance and education in developing human potential cannot be understated. A child's brain continues to grow and develop after birth, strengthening the trillions of connections between neurons as used, and eliminating those that are not used, which supports the belief that nurturance plays a key role in the development of the child (Lee, Chen, & Schlaug, 2003). Musical experiences can play a central role in brain development, and active participation with music can stimulate the formation of cognitive development (Rauscher, 2004). The early childhood environment largely determines the characteristics and behaviors formed to meet life's challenges. During the very early years in particular, the kind of care—material, emotional, and mental—a child receives lays the foundation for further mental and emotional development. A positive, safe, caring, and stimulating environment promotes emotional stability and well-being for the child (Reiner, 1997). In contrast, children who have suffered trauma such as chronic neglect or physical abuse suffer deficits in their ability to learn, and the regions of the brain responsible for emotion and attachment are 20 to 30 percent smaller (Perry, Pollard, Blakley, Baker, & Vigilante, 1995).

Needless to say, a child's daily care, nurturance, and education have a direct influence on emotional and mental development, enhancing the capacity to learn both in school and throughout life. Providing parents and caregivers with education and support to facilitate optimal development for the child is crucial. Penelope Leach (1994) tells us that the basic skills of transmitting affection such as gentleness, touching, smiling, singing, and warmly responding to a child's needs can be learned, as can an understanding of the different stages of child development.

Research also clearly states that music can assist in educating the child (Harris, 2007). The arts in general, and music in particular, can offer children an important avenue for expression and communication as they strive to decipher their experiences (Schiller & Veale, 1996). Howard Gardner's (1999a) theory on multiple intelligences supports the view that music plays a central role in the development of young children and that musical response is an innate part of human beings and suggests engaging children with musical experiences. Gardner states that children are using many of their intelligences when participating in musical experiences, which naturally stimulates sensory and physical responses. From singing to the unborn child and rocking the unsettled infant to providing appropriate early childhood music curricula, it is of utmost benefit to children globally to share this knowledge of early childhood nurturance, education, techniques, and approaches with and to support parents, caregivers, and educators for optimal results in laying the foundation for the future. The Mozart and the Young Mind curriculum lends itself to such an honorable purpose—as yet another educational tool on the path to making these visions of global collaboration and a sustainable, equitable, and caring world, come true!

The works of Pestalozzi (1976), Montessori (1964), and Dewey (1966) promote an education system that fosters ethical and caring relations. As early as the eighteenth century, Pestalozzi called for a system of education based upon the developmental stages of the child and, interestingly, this is still considered as progressive education today. Building on the works of these educational thinkers, we can prepare children to meet the unprecedented challenges of their world and actualize their unique capacity for creativity and caring. By effectively developing educational methods and materials that nurture and support the child, we can strive to foster a more caring society. Only then will we have accomplished our goal in preparing them for their future.

Role of Technology

In addition to bringing music into our homes and classrooms, we all realize the potential of technology and its unprecedented influence upon the future—its ability to change life from that of our parents to the unimaginable lifestyle of the future. Research demonstrates that ideas are the most valuable of assets and that technology can play a role in freeing the imagination (Daignault, 1996).

Consider, for example, the diversity of music accessible at the push of a button, and the effect of globalization on music perception and recognition across cultures. Since the development of recording devices, there has been an explosion of styles, genres, and cross-pollination that expands the way we hear the world and accept new sounds. The multicultural realm of today's music encompasses styles of all traditions and backgrounds. Through multicultural music, children can explore the world they live in and share their feelings and ideas with others. It is a step forward in preparing the child for the global world of tomorrow and places music as an integral part of the education curriculum. The future impact of technology on music is impossible to forecast, but it should greatly expand our many experiences of music.

THE MONTESSORI SYSTEM

The enormous environmental, economic, global, and personal challenges that lie ahead in the postindustrial information economy have put new emphasis on education, including early childhood education. Despite the fact that the Montessori system of education was founded in the early 1900s, it still embodies the beliefs and suggestions of today's educators who are on a quest to create an early childhood system of education that truly prepares the young child with the skills necessary to live and function as a responsible citizen of the world.

Built on the premise that children are inherently inquisitive and learn by being engaged in a hands-on environment, the Montessori system of education promotes the teacher as a facilitator of learning, guiding and supporting the child's learning. Children are given greater freedom to pursue their interests, with more emphasis on self-directed learning, personal responsibility, and working in groups to develop relationship skills. Children flourish in an environment of engaged learning, such as pouring water, throwing a ball, moving to music, or rhythmically beating drums. While stimulating the senses, the child learns with his "whole" being, and this system of learning is directly enhanced with music (Harris, 2005). During long periods of music and movement, even the young child can stay focused on the task at hand, and thus music aids in the development of persistence toward learning (Katz, 1993). Through music and movement, the young child develops an awareness of her body in space and the inner-felt pulses of rhythm. She experiences interaction with peers, the give and take of exchange and compromise, creativity and newness, and freedom of thought without assessment; she learns about relationships and problem solving, as well as develops an awareness of the contribution of others, an appreciation of differences, and tolerance. Similar to the partnership system of education that Riane Eisler (1987) discusses in *The Chalice and the Blade*, these models for education and society stress environmental sustainability, nonviolence, multiculturalism, and gender fairness.

Tomorrow's Children

Globalization has left an impact on music perception and recognition across cultures. We need a curriculum that supports globally positive attitudes, values, and behaviors. Joan Rockwell (1974) reminds us that our values are passed on from generation to generation through cultural narratives and song, and these are powerful tools in reinforcing or changing attitudes,

values, and behaviors. Using music to facilitate a curriculum informed by multiculturalism and equality could have profound, lasting results. It is our duty to keep an open mind and embrace an educational system based upon development of the “whole” child, rooted in the belief of a better world for all humanity.

When I started to write this book, I suggested a need for change, a need to provide children around the world with equal opportunity for the future. To ensure that each child's needs are met, and in turn, to produce a generation of globally responsible citizens who foster empathic views and who act morally and ethically toward the betterment of humanity, educators and parents need to come together and do whatever possible to provide the building blocks and framework to ensure that a feat of such magnitude reaches fruition. No doubt there are many books written covering this topic and providing various strategies for success. However, my intent is rather to offer, through music, a means to reach such a goal.

Work in the arts requires that children learn how to pay attention to relationships, and so many of the decisions that are made in life are decisions that cannot be made by appealing to formulas, recipes, or algorithms. This book promotes that kind of perception and engenders that sort of thinking. While the quality of early childhood education can have long-term effects on a child's attitude toward further education and educational achievement (Andersson, 1989), evidence indicates that once children's achievement patterns are established, there is a high degree of continuity from that point forward, with early attainment setting boundaries on later attainment (Belsky & MacKinnon, 1994). Basically, what happens in the early years of a child's life determines to a great extent the kind of adult the child will become (Shore, 1997). My goal is to meet and exceed the challenge of giving young children the best possible preparation for the future. To do this, a basic part of their learning experiences must be involvement with the arts (Sylva, 1994). Research recommends integrating music experiences with other aspects of the curriculum and encouraging today's children to enrich their creative thinking, problem solving, risk taking, teamwork, and communication skills. These are the necessary tools for tomorrow's world and are precisely the skills the arts teach (Buchen, Milley, Oderlund, & Mortatotti, 1983). As we embrace the twenty-first century and face the challenges of the future with an opportunity and responsibility to change, research suggests that providing quality music-enriched education today will ensure optimal opportunity for our children to succeed in the rapidly changing world of tomorrow.

I propose a call to action for all of us—not to postpone until tomorrow what must be done today—to work together globally, to save planet Earth by enriching the creative minds of today's children.

We have much to learn from the lives of children. From them we observe directly that music is a natural human endeavour. For them, we all must feel safe to partake of it in our own cultural and personal ways. (Willingham, 2007, p. 98)

Appendix A

SONGS LISTED ALPHABETICALLY

“Aiken Drum”
“A Ram Sam Sam”
“Bombalalom”
“The Button and the Key”
“Clap, Clap, Clap”
“Clickety, Clickety, Clack”
“Do, Re”
“Do, Re, Mi”
“Do You Know the Muffin Man?”
“Down by the Bay”
“Finger Song”
“Freight Train”
“Going to Kentucky”
“Hallelujah Chorus” (*Messiah*)
“Hello”
“Here We Are Together”
“Hot Cross Buns”
“If You’re Happy and You Know It”
“I Hear the Mill Wheel”
“I’m in the Mood for Clapping”
“Irish Jig”
“Mary’s Wearing Her Red Dress”
“Ode to Joy”
“Old MacDonald”
“Open, Shut Them”
“Ragtime”
“Row, Row, Row Your Boat”
“Sakura”
“Scotland’s Burning”
“Staccato and Legato”
“Toumba”
“Turn Around, Clap, Clap”
“Twinkle, Twinkle, Little Star”
“Wake Up, Toes”

Appendix B

ACTION SONGS

The Button and the Key

Around comes Scott, around comes he
He is hiding the button and the key
Who has the button? (*sung by the group*)
I have the button (*sung by the one child holding the button*)
Who has the key? (*sung by the group*)
I have the key (*sung by the one child holding the key*)

Children sit in a circle with their eyes closed and hands cupped behind their backs to receive a button or a key. While those sitting sing the song, one child walks around the outside of the circle, placing the button and the key in the cupped hands of two different children. This must be completed by the time the group finishes singing the words, “She is hiding the button and the key.” Everyone sings, “Who has the button?” and then listens carefully to the one child who responds with, “I have the button.” All sing, “Who has the key?” and once again listen carefully to the response trying to recognize the voice. Once the song is sung, the child on the outside of the circle calls on circle members who indicate that they have recognized the voices of those who sang and can identify them. Once identified correctly, that child takes the place of the child on the outside of the circle and now takes a turn placing the button and key in the cupped hands of two friends while the song is sung.

Hello

Hello, Hello, Hello
Ti tripleti trip ti trip
Good bye, Good bye, Good bye
Ti tripleti, tripleti, trip
Ti-tripleti, tripleti, triple (x3)
Ti-tripleti, tripleti, trip

Children find a partner and face each other to begin the song.

Line 1: Each child claps hands for the first syllable of “Hel-lo” and slaps his partner’s hands (palms together) for the second syllable of “Hel-lo.”

Line 2: Partners link right elbows and skip around, making a half circle turn, to trade places.

Line 3: Repeat the clap-slap movement for the words “good bye.”

Line 4: Link left arms and go back to their original positions

Line 5: All children separate from their partners and skip around the room and take the closest child as a partner by the end of the song.

Now facing the new partner the song is once again repeated.

Open, Shut Them

Open, shut them, open, shut them
 Give a little clap, clap, clap
 Open, shut them, open, shut them
 Lay them in your lap, tap
 Creep them, creep them, creep them, creep them
 Almost to your chin
 Open wide your little mouth
 Do not let them in.

Falling, falling, falling, falling
 Almost to the ground
 Quickly pick them up again
 Gently lay them down
 Roll them, roll them, roll them, roll them
 Faster, faster, faster . . .
 Slowly, slowly, slowly, slowly
 Gently lay them down.

- Line 1. Open and shut hands as directed by text.
 Line 2. Place palms of hands together and tap.
 Line 4. Fold hands in lap and gently tap together.
 Line 5. Walk fingers slowly up toward the chin.
 Line 7. Open mouth wide, and wait.
 Line 8. Quickly hide hands behind the back.
 Line 9. Start with hands above the head and slowly let them fall just above the ground.
 Line 11. Quickly lift hand above head.
 Line 12. Fold hands in lap
 Line 13. An exaggerated slow roly-poly movement with arms, becoming faster and faster.
 Line 15. Gradually the roly-poly movement becomes slower and slower.
 Line 16. Once again calmly fold hands in lap.

This song may be repeated in complete silence with just hand actions for added practice in inner hearing, timing, and rhythm.

Scotland's Burning

When introducing with solfège see below, when introducing with hand signs, refer to Curwen-Kodály hand signs. Start with the hand position for a low *so*; which is with arms outstretched facing downward and hands clapping together.

Scotland's burning, Scotland's burning	<i>Sol-sol-do-do, Sol-sol-do-do</i>
Look out, Look out,	<i>Re-mi, Re-mi</i>
Fire, fire, fire, fire	<i>Sol, (clap hands above head) sol-sol-sol</i>
Pour on water, pour on water, (clap this <i>sol</i> as low—hands down together)	<i>Sol-sol-do-do, Sol-sol-do-do</i>

This song may be repeated in complete silence with just hand actions for added practice in inner hearing, timing, and rhythm.

Appendix C

TRACKS ON CDS BY LESSON PLAN

CD 1

SEPTEMBER

Lesson Plan 1: Introduce repertoire of songs.

1. “Bombalalom”
2. “Here We Are Together”
3. “Mary’s Wearing Her Red Dress”
4. “Twinkle, Twinkle Little Star”
5. “Finger Song”
6. “Turn Around, Clap, Clap”
7. “Clap, Clap, Clap”
8. “Irish Jig”—loud and soft
9. “A Ram Sam Sam”
10. “Old MacDonald”
11. “Do Re Mi” (sitting)
12. “Open, Shut Them”

OCTOBER

Lesson Plan 2: Introduce solfège and hand signs beginning with do, re, and then mi.

13. “Bombalalom”
14. “Here We Are Together”
15. “Finger Song”
16. Farm animals—goat, sheep, donkey, horse
17. “If You’re Happy and You Know It”
18. “Do, Re, Mi” (body movement)
19. “Do, Re”
20. “Do, Re, Mi”
21. Staccato and Legato
22. Mozart—“Twinkle, Twinkle”—high and low
23. “A Ram Sam Sam”
24. “Freight Train”—tempo
25. “I Hear the Mill Wheel”
26. “Open, Shut Them”

NOVEMBER

Lesson Plan 3: Explore musical styles through dance and movement with scarves.

27. “Bombalalom”
28. “Here We Are Together”
29. “I’m in the Mood for Clapping “
30. “Wake Up, Toes”
31. “Turn Around, Clap, Clap”
32. “A Ram Sam Sam”
33. Winter friends—coyote, chickadee, cardinal, squirrel
34. “Hot Cross Buns”
35. “Do You Know the Muffin Man?”
36. Beethoven, “Ode to Joy”—*freeze*
37. “Freight Train”
38. “Aiken Drum”
39. “Open, Shut Them”

DECEMBER

Lesson Plan 4: Introduce world cultures and customs.

40. “Bombalalom”
41. “Here We Are Together”
42. “Mary’s Wearing Her Red Dress”
Intro to percussion bells and shakers
41. “Do, Re, Mi”
42. “Do, Re”
43. “Do, Re, Mi”
44. Staccato and legato
45. Handel’s *Messiah*—*dynamic expression*

JANUARY

Lesson Plan 5: Introduce percussion instruments (see lesson plans)

48. “Bombalalom”
49. “Here We Are Together”
50. “I’m in the Mood for Clapping“
51. “Wake Up, Toes”
52. “Clap, Clap, Clap”
53. “Do, Re, Mi”
54. “Do, Re”
55. “Do, Re, Mi”
56. Staccato and Legato
57. “Clickety, Clickety, Clack”
58. “Scotland’s Burning”
59. “Going to Kentucky”
60. “Sakura”—*dance with scarves*
61. “Ragtime”

62. Animal sounds—goat, donkey, sheep, hors
63. “A Ram Sam Sam”
64. “I Hear the Mill Wheel”
65. “Freight Train”
66. “Toumba”—Israel
67. “Open, Shut Them”

CD 2

FEBRUARY

Lesson Plan 6: Timeline of composers

1. “Bombalalom”
2. “Clap, Clap, Clap”
3. “Row, Row, Row Your Boat”
4. “Do, Re, Mi”
5. “Do, Re”
6. “Do, Re, Mi”
7. Staccato and legato
8. “Scotland’s Burning”
9. “Going to Kentucky”
10. Animal sounds—raccoon, robin, grasshopper, owl
11. Winter friends—coyote, chickadee, cardinal, squirrel
12. “I Hear the Mill Wheel”
13. “Toumba”; silence game
14. “Open, Shut Them”

MARCH

Lesson Plan 7: Introduce Prokofiev’s Peter and the Wolf, and follow with attendance to a live concert by the local orchestra or community band.

March: Weeks 1 and 2

15. “Bombalalom”
16. “Here We Are Together”; Introduce half of *Peter and the Wolf* (10 minutes each day)
17. “Going to Kentucky”
18. “Scotland’s Burning”
19. “Open, Shut Them”

March: Week 3

Peter and the Wolf: poster of characters and corresponding instruments
Review of instruments

March: Week 4

Peter and the Wolf: matching character cards and instrument cards
Introduction to orchestral families of instruments

APRIL

Lesson Plan 8: Introduce mapping of song, timbre recognition, and staff notation

20. “Hello”
Solfège
21. “Scotland’s Burning”
22. Baby animals—kittens, ducklings, puppies, baby birds
23. Spring sounds—raccoon, robin, grasshopper, owl
24. “The Button and the Key”
25. “Row, Row, Row Your Boat”—*mapping*
26. “Bombalalom”—*mapping*
27. “Open, Shut Them”

MAY

Lesson Plan 9: Notation on the staff and dynamic cards

28. “Hello”
29. “Down by the Bay”
30. “Scotland’s Burning”
31. Gershwin—jazz/ragtime
32. “Row, Row, Row Your Boat”

References

- Adams, M. J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Andersson, B. E. (1989). The importance of public day care for preschool children's later development. *Child Development*, 60(4), 857–66.
- Aronoff, F. W. (1979). *Music and young children: Expanded edition*. New York: Turning Wheel Press.
- Ashton, P. T. & Webb, R. B. (1986). *Making a difference: Teachers' sense of efficacy, and student achievement*. New York: Longman.
- Bachmann, M. L. (1991). *Dalcroze today: An education through and into music*. New York: Oxford University Press.
- Balkwill, L. L., Thompson, W. F., & Matsunaga, R. (2004). Recognition of emotion in Japanese, Western, and Hindustani music by Japanese listeners. *Japanese Psychological Research*, 46(4), 337–49.
- Balodis, F. (1995). Music for Young Children. *A Program for Children of All Ages Who Want to Learn Music and Have Fun Doing It* (self-published brochure). An informative brochure detailing this child-centered approach to learning music.
- Begley, S. (1997). How to build a baby's brain. *Newsweek* (Spring/Summer), 28–32.
- Belsky, J. & MacKinnon, C. (1994). Transition to school: Developmental trajectories and school experiences. *Early Education and Development*, 5(2), 106–19.
- Bennett, P. G. (1992). Perspectives: On preparing classroom teachers to teach music. *Journal of Music Teacher Education*, 1, 22–27.
- Berk, L. (2004). *Developing through the lifespan* (3rd ed.). New York: Allyn & Bacon.
- Best, A. B. (1991). *Teaching children with visual impairments*. Milton Keynes, PA: Open University Press.
- Blacking, J. (1973). *How musical is man?* Seattle: University of Washington Press.
- Blacking, J. (1995). *Venda children's songs*. Chicago: University of Chicago Press.
- Boehnlein, M. M. (1990). Research and evaluation summary of Montessori programs. In D. Kahn (ed.), *Implementing Montessori education in the public sector* (pp. 476–83). Cleveland, OH: The North American Montessori Teachers' Association.
- Boehnlein, M. M. (1998). Montessori research analysis in retrospect. *The North American Montessori Teachers' Association Journal*, 13(3), 1–119.
- Boudreau, D. M. & Hedberg, N. L. (1999). A comparison of early literacy skills in children with specific language impairment and their typically developing peers. *American Journal of Speech-Language Pathology*, 8, 249–60.
- Boyce-Tillman, J. (2007). Spirituality in early childhood music education. In K. Smithrim & R. Uptis (eds.), *Listen to their voices: Research and practice in early childhood music*. Toronto, ON: Canadian Music Educators Association.
- Bredenkamp, S. (1987). *Developmentally appropriate practice in early childhood programs serving children from birth through age eight*. Washington, DC: National Association for the Education of Young Children.
- Bresler, L. (1994). Music in a double bind: Instruction by non-specialists in elementary schools. *Arts Education Policy Review*, 95(3), 30–36.
- Brody, J. (1991). Not just music, bird song is a means of courtship and defense. *New York Times*, April 9.
- Buchen, I., Milley, J., Oderlund, A., & Mortarotti, J. (1983). *The arts: An essential ingredient in education*. San Francisco: California Council of the Fine Arts Deans.
- Bunt, L. (1994). *Music therapy: An art beyond words*. London: Routledge.
- Burt, L., Holm, A., & Dodd, B. (1999). Phonological awareness skills of four year old British children: An assessment and developmental data. *International Journal of Language and Communication Disorders*, 34(3), 311–35.
- Burton, J., Horowitz, R., & Abeles, H. (1999). *Learning in and through the arts: Curriculum implications*. Washington, DC: Arts Education Partnership and the President's Committee on the Arts and Humanities.
- Butzlaff, R. (2000). Can music be used to teach reading? *Journal of Aesthetic Education*, 34(3–4), 167–78.
- Campbell, D. (1997). *The Mozart effect*. New York: Avon Books.
- Campbell, P. S. (1998). *Songs in their heads: Music and its meaning in children's lives*. New York: Oxford University Press.
- Carstens, C., Huskins, E., & Hounshell, G. (1995). Listening to Mozart may not enhance performance on the revised Minnesota paper form board test. *Psychological Reports* 77(1), 111–14.

- Catterall, J. (1998). Does experience in the arts boost academic achievement? *Art Education*, 51(3), 6–11.
- Catterall, J., Chapleau, R., & Iwanaga, J. (1999). *Involvement in the arts and human development: General involvement and intensive involvement in music and theater arts* [Internet]. University of California. Retrieved July 15, 2005, from <http://www.aep-arts.org/highlights/resources/toolkits/criticallinks.impacts.doc>.
- Children's Center for the Visually Impaired, (n.d.). Programs & Services Overview. Retrieved July 29, 2008, from http://www.trolleyrun.org/programs_and_services.asp
- Choksy, L. (1974). *The Kodaly Method: Comprehensive music education from infant to adult*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Choksy, L. (1999). *The Kodaly Method: Comprehensive music education from infant to adult*. Englewood Cliffs, NJ: Prentice Hall, Inc.
- Choksy, L., Abramson, R. M., Gillespie, A., & Woods, D. (1986). *Teaching music in the twentieth century*. Englewood Cliffs, NJ: Prentice Hall.
- Choksy, L., Abramson, R. M., Gillespie, A., & Woods, D. (2000). *Teaching music in the twentieth century* (2nd ed.). New Jersey: Prentice Hall.
- Clark, C. & Akerman, R. (2006). *Social inclusion and reading: An exploration*. London: National Literacy Trust.
- Clifford, A. J. & Takacs, C. (1991). Marotta Montessori schools of Cleveland follow-up study of urban center pupils. Unpublished manuscript, Cleveland State University, Cleveland, Ohio.
- Clough, L. (2004, June 16–20). *Finding a voice: Case study of music therapy with a young selective communicator/mute from an asylum seeker background*. Unpublished presentation to the 6th European Music Therapy Congress, University of Jyväskylä, Finland.
- Cobb, P., Yackel, E., & Wood, T. (1992). A constructivist alternative to the representational view of mind in mathematics education. *Journal for Research in Mathematics Education*, 23(1), 2–33.
- Curtis, S. L. (1986). The effect of music on pain relief and relaxation of the terminally ill. *Journal of Music Therapy*, 23, 10–24.
- Daignault, L. (1996). *Children's creative musical thinking within the context of a computer-supported improvisational approach to composition*. (Doctoral Dissertation, Northwestern University). *Dissertation Abstracts International*, 57, 4681A.
- D'Amato, M. (1988). A search for tonal pattern perception in Cebus monkeys: Why monkeys can't hum a tune. *Music Perception* 5(4), 453–80.
- Dean, J. & Gross, I. L. (1992). Teaching basic skills through art and music. *Phi Delta Kappan*, 73(8), 613–18.
- DeBedout, J. K. & Worden, M. C. (2006). Motivators for children with severe intellectual disabilities in the self-contained classroom: A movement analysis. *Journal of Music Therapy*, 43(2), 123–35.
- DeCasper, A. J. & Fifer, W. (1980). Of human bonding: Newborns prefer their mothers' voices. *Science*, 208(4448), 1174–76.
- Dewey, J. (1934). *Art as experience*. New York: Putnam.
- Dewey, J. (1966). *Democracy and education: An introduction to the philosophy of education*. New York: Free Press.
- Dewey, J. (1980). *Art as experience*. New York: Perigree Books.
- DiPietro, J. (2000). Baby and the brain: Advances in child development. *Annual Review of Public Health* 21, 455–71.
- Duax, T. (1989). Preliminary report on the educational effectiveness of a Montessori school in the public sector. *North American Teachers' Association Journal*, 14(2), 56–62.
- Edgerton, C. L. (1994). The effect of improvisational music therapy on the communicative behaviors of autistic children. *Journal of Music Therapy*, 31, 31–62.
- Eisler, R. (1987). *The chalice and the blade: Our history, our future*. San Francisco: Harper & Row.
- Eisner, E. W. (1994). *Cognition and curriculum reconsidered* (2nd ed.). New York: Teachers College Press.
- Elliott, S. N., Argulewicz, E. N., & Turco, T. L. (1986). Predictive validity of the scales for rating the behavioral characteristics of superior students for gifted children from three sociocultural groups. *Journal of Experimental Education*, 55(1), 27–32.
- Entwisle, D. R., Alexander, K. L., Cadigan, D., & Pallas, A. (1986). The schooling process in first grade: Two samples a decade apart. *American Educational Research Journal*, 23(4), 587–613.
- Evans, E. D. & Tribble, M. (1986). Perceived teaching problems, self-efficacy, and commitment to teaching among preservice teachers. *Journal of Educational Research*, 80(2), 81–85.
- Falk, C. (2004). Hmong instructions to the dead: What the qeej say in the Qeej Tu Siav. Part 1. *Asian Folklore Studies* 63(1), 1–29.
- Falk, D. (2000). Hominid brain evolution and the origins of music. In N. L. Wallen, B. Merker, & S. Brown (eds.), *The origins of music* (pp. 197–216). Cambridge, MA: The MIT Press.
- Feierabend, J. (1997). Music and movement for infants and toddlers: Naturally wonder-full. *Kodaly Enjoy* 23(2), 7–10.
- Ficken, T. (1976). The use of songwriting in a psychiatric setting. *Journal of Music Therapy*, 13(4), 163–72.
- Finnerty, J. (1999). From lizards to Picasso: The application of neurological research. Paper presented at the Learning and the Brain Conference, Boston, MA.
- Fisher, A. (2002). *Radical ecopsychology: Psychology in the service of life*. New York: SUNY Press.
- Flohr, J. E., Persellin, D. C., Miller, D. C. (1993). Quantitative EEG Differences between baseline and psychomotor response to music. *Texas Music Education Research*, 1–7.
- Flohr, J. W., Persellin, D. C., & Miller, D. C. (1996). *Children's electro physical responses to music*. Paper presented at the 22nd International Society for Music Education World Conference, Amsterdam, Netherlands, July.
- Frazer, J. & Kreuter, K. (1987). *Discovering Orff: A curriculum for music teachers*. New York: Schott Music Corporation.
- Freire, P. (1973). *Education for critical conscientious continuum*. New York: Continuum International Publishing Group.
- Gagne, F. (2003). Transforming gifts into talents: The DMGT as a developmental theory. In N. Colangelo & G. A. Davis (eds.), *Handbook on gifted education* (3rd ed.), (pp. 60–74). Boston, MA: Allyn and Bacon.
- Gallahue, D. L. (1982). *Understanding motor development in children*. New York: John Wiley & Sons.

- Galliford, J. (2006). The effects of experience during early childhood on the development of linguistic and non-linguistic skills. Unpublished paper presented at the MENC conference, April, Salt Lake City, Utah.
- Gamlin, P. J. & Luther, M. G. (1993). Dynamic assessment approaches with young children and adolescents. *International Journal of Cognitive Education and Mediated Learning*, 2(1), 25–41.
- Gardiner, M., Fox, A., Knowles, F., & Jeffrey, D. (1996). Learning improved by arts training. *Nature*, 381(6580), 284–85.
- Gardner, H. (1973). *The arts and human development: A psychological study of the artistic process*. New York: Wiley & Sons.
- Gardner, H. (1983). *Frames of mind: Theory of multiple intelligences*. New York: HarperCollins.
- Gardner, H. (1999a). The disciplined mind: Beyond facts and standardized tests, the K–12 education that every child deserves. New York: Penguin Putnam.
- Gardner, H. (1999b). *Intelligence reframed: Multiple intelligences for the 21st century*. New York: Basic Books.
- Gelman, R., & Brown, A. L. (1986). Changing views of cognitive competence in the young. In N. Smelser & D. Gerstein (eds.), *Discoveries and trends in behavioral and social science* (pp. 175–207). Washington, DC: National Academic Press.
- Goehagan, N., & Mitchelmore, M. (1996). Possible effects of early childhood music on mathematical achievement. *Australian Research in Early Childhood*, 1, 57–64.
- George, A. E. (1912). *The Montessori method*. New York: Frederick A. Stokes Co.
- Gestwicki, C. (1999). *Developmentally appropriate practice: Curriculum and development in early education*. New York: Delmar Publishers.
- Gibson, F. J. (1969). *Principles and perceptual learning and development*. New York: Appleton-Century-Crofts.
- Gibson, S. & Dembo, M. H. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology*, 76(4), 569–82.
- Gilbert, J. P. (1979). Assessment of motor skill development in young children: Test construction and evaluation procedures. *Psychology of Music*, 7(2), 21–25.
- Gilman L. & Paperte, F. (1952). Music as a psychotherapeutic agent. In E. A. Gutheil (ed.), *Music and your emotions* (pp. 24–55). New York: Liveright Publishing Co.
- Ginsburg, H. P. & Baroody A. J. (2003). *Test of early math ability* (3rd ed.). Texas: PRO-ED.
- Glassman, L. R. (1991). Music therapy and bibliotherapy in the rehabilitation of traumatic brain injury: A case study. *Arts in Psychotherapy*, 18(2), 149–56.
- Golden, D. (1994). Building a better brain. *Life* (July), 62–70.
- Gordon, E. E. (1995). *Jump right in: The instrumental series*. [Recorded by Grunow, R. F., Gordon, E. E., & Azzara, C. D.] Chicago, IL: GIA Publications.
- Gordon, E. E. (1997). *A music learning theory for newborn and young children* (2nd Ed.). Chicago: GIA Publications.
- Gordon, E. E. (2003). *A music learning theory for newborn and young children*. Chicago: GIA Publications.
- Gordon, E. E., Bolton, B. M., Reynolds, A. M., Taggart, & C. C., Valerio, W. H. (1998). *Music play: The early childhood music curriculum*. Chicago, IL: GIA Publications.
- Green, R. (1947). The music program in Veterans Administration Hospitals. *National Music Council Bulletin*, 7, 20–21.
- Green, R. (1948). Music in Veterans Administration hospitals. *National Music Council Bulletin*, 8, 15–17.
- Green, R. (1950). Veterans Administration hospital music. *Hospital Music Newsletter*, 2, 22–23.
- Greene, M. (1995). *Releasing the imagination*. San Francisco, CA: Jossey-Bass Inc.
- Gromko, J. E., (2005). The effect of music instruction on phonemic awareness in beginning readers. *Journal of Research in Music Education*, 53(3), 199–209.
- Gruhn, W., Altenmuller, E., & Babler, R. (1997). The influence of learning on cortical activation patterns. *Bulletin of the Council for Research in Music Education*, 133(2), 25–30.
- Guilford, J. P. (1968). *Intelligence, creativity and their educational implications*. San Diego: Robert R. Knapp.
- Guilmartin, K. K. (2002). Ages and stages: Is that the same child I taught last year? The very young child. *American Music Teacher*, 52(2), 26–28.
- Guskey, T. R. (1988). Teacher efficacy, self-concept, and attitudes toward the implementation of instructional innovation. *Teaching and Teacher Education*, 4(1), 63–69.
- Hainstock, E. G. (1997). *The essential Montessori: An introduction to the woman, the writings, the method, and the movement* (3rd ed.). New York: Penguin Books.
- Halliday, M. A. K. (1977). *Explorations in the functions of language*. New York: Elsevier North-Holland.
- Hargreaves, D. J. (1994). Musical educational for all. *Psychologist*, 7, 357–358.
- Hargreaves, D. J., & Davis, M. A. (2000). Learning . . . the beat goes on. *Childhood Education*, 76(3), 148–54.
- Harris, M. A. (2004). *Montessori Mozarts make music*. Unpublished Handbook for Teachers.
- Harris, M. A. (2005a). *Differences in mathematics scores between students who received traditional Montessori instruction and students who received enriched Montessori instruction*. (Unpublished master's dissertation, University of Windsor, Ontario, Canada.)
- Harris, M. A. (2005b). Montessori Mozart programme. *Montessori International Journal*, 75, 17.
- Harris, M. A. (2005c). Montessori research. *Montessori International Journal*, 76, 54.
- Harris, M. A. (2006). *The effects of music-enriched instruction on the mathematics scores of pre-school children*. Bridges London, Mathematics, Music, Art, Architecture, Culture Conference proceedings, 2006. <http://www.sckans.edu/~bridges/>. Mathartfun.com, Taruin Books, UK.

- Harris, M. A. (2007). Montessori, music, and math. In K. Smithrim & R. Uptis (eds.), *Listen to their voices: Research and practice in early childhood music* (pp. 243–53). Toronto, ON: Canadian Music Educators Association.
- Harris, M. (2007). Montessori, music and math. In Uptis, R., & Smithrim, K. (eds.) *Listen to their Voices: Research to Practice*, Vol. 3. Toronto: Canadian Music Educators Association. [AU2]
- Hepper, P. G. (1991). An examination of fetal learning before and after birth. *Irish Journal of Psychology*, 12, 95–107.
- Hickerson, M. (1983). *A comparison of left and right brain hemisphere processing and brain related sex differences in kindergarten children*. (Unpublished doctoral dissertation, East Tennessee State University). *Dissertation Abstracts International* 44/05, 1388, (UMI 8315321).
- Himes, D. (2004, June). *Dalcroze Eurhythmics: Living the music*. Paper presented at the Royal Conservatory of Music, Toronto, ON.
- Hodges, D. A. (1996). Human musicality. In D. A. Hodges (ed.), *Handbook of music psychology* (pp. 29–68). San Antonio, TX: IMR Press.
- Hodges, D. (2000). *Why are we musical? Support for an evolutionary theory on human musicality*. Paper presented at the 6th International Conference on Music Perception and Cognition, Keele, England.
- Hoermann, D. B. (1974). The role of the elementary classroom teacher in music education. *ISME Yearbook (Challenges in Music Education)*, XI Perth, 128–34.
- Hoffman, J. (1997, June). Tuning in to the power of music. *RN*, 60, 52–54.
- Hoffman, J. (2003). Music, math and the mind. *Today's Parent*. Retrieved October 8, 2004, from <http://www.todayparent.com/education/general/article>.
- Hurwitz, I., Wolff, P. H., Bortnick, B. D., & Kokas, K. (1975). Nonmusical effects of the Kodaly music curriculum in primary grade children. *Journal of Learning Disabilities*, 8, 45–51.
- Husain, G., Thompson, W. F., & Schellenberg, E. G. (2002). Effects of musical tempo and mode on arousal, mood, and spatial abilities. *Music Perception*, 20(2), 151–71.
- Jackson, N. A. (2003, Winter). A survey of music therapy methods and their role in the treatment of early elementary school children with ADHD. *Journal of Music Therapy*, 40 (4).
- Jellison, J. A. (2000). A content analysis of music research with disabled children and youth (1975–1999): Applications in special education. In American Music Therapy Association (eds.), *Effectiveness of music therapy procedures: Documentation of research and clinical practice* (pp. 199–264). Silver Spring, MD: AMTA.
- Jensen, E. (2001). *Arts with the brain in mind*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Kaempffert, W. (1944, April 16). Science in review: Possibilities of music in aiding the mentally ill will be tested at Soldier's Hospital. *The New York Times*, p. E9.
- Kalmar, M., (1989). The effects of music education on the acquisition of some attribute-concepts in preschool children. *Canadian Music Educator*, 30(2), 5–59.
- Kandel, E. R., Schwartz, J. H., & Jessell, T. M. (2000). *Principles of neural science* (4th ed.). New York: McGraw-Hill.
- Katz, L. (1993). *Dispositions as educational goals*. ERIC Digest (Report No. EPO-PS-93–10). Retrieved from ERIC database.
- Kelstrom, J. M. (1998). The untapped power of music: Its role in the curriculum and its effect on academic achievement. *NASSP Bulletin*, 82, 34–43.
- Kelly, S. N. (1998). Preschool classroom teachers' perceptions of useful music skills and understandings. *Journal of Research in Music Education*, 46(3), 374–83.
- Kern, P. & Wolery, M. (2001). Participation of a preschooler with visual impairments on the playground: Effects of musical adaptations and staff development. *Journal of Music Therapy*, 38(2), 149–64.
- Kindermusik Foundations of Learning. (2001). *Put your life to music*. Retrieved July 29, 2008, from http://www.kindermusik.com/Teach/KI_Brochures/KIBrochureFront.htm
- Kirchner, F. (1998, January 14). *Governor wants to soothe Georgia newborns with classical tunes*, Press release, Atlanta Associated Press.
- Klinger, R. (1996, Fall). Children's song acquisition: Learning through immersion. *Orff Echo*, 29(1), 35–36.
- Koen, B. D. (2005). Medical ethnomusicology in the Pamir Mountains: Music and prayer in healing. *Journal of Ethnomusicology*, 49(2), 287–311.
- Kolb, G. R. (1996). Reading with a beat: Developing literacy through music and song. *The Reading Teacher*, 50(1), 76–79.
- La Fontaine, J. (1990). *Child sexual abuse*. Cambridge, UK: Polity Press.
- Lamb, S. J. & Gregory, A. H. (1993). The relationship between music and reading in beginning readers. *Educational Psychology*, 13, 19–27.
- Leach, P. (1994). *Children first*. New York: Alfred A. Knopf.
- Lecanuet, J. P. (1996). Prenatal auditory experience. In I. Deliege and J. Sloboda (eds.). *Musical beginnings* (pp. 3–34). Oxford: Oxford University Press.
- Lee, D. J., Chen, Y., & Schlaug, G. (2003). Corpus callosum: Musician and gender effects. *NeuroReport*, 14(2), 205–9.
- Lehrman, P. D. (2007). The healing power of music. *Mix*, 31(5).
- Lemonick, M. (2000). *Music on the brain: Biologists and psychologists join forces to investigate how and why humans appreciate music*. OH: Glencoe/McGraw-Hill.
- Levine, M. (2002). *A mind at a time*. New York: Simon & Schuster.
- Liu, H., Kuhl, P., & Tsao, F. (2003). An association between mothers' speech clarity and infants' speech discrimination skills. *Developmental Science* 6(3): 1–10.

- Marsh, A. (1999). Can you hum your way to math genius? *Forbes*, 16: 176–80.
- McKay, L. A. (1945). Music as a group therapeutic agent in the treatment of convalescents. *Sociometry*, 8(3/4), 233–37.
- McPherson, G. E. (2005). From child to musician: Skill development during the beginning stages of learning an instrument. *Psychology of Music*, 33(1), 5–35.
- Megel, M. E., Houser, C. W., & Gleaves, L. S. (1998). Children's responses to immunizations: Lullabies as a distraction. *Issues in Comprehensive Pediatric Nursing*, 21(3), 129–45.
- Mickela, T. (1990). Does music have an impact on the development of students? A paper presented at the California Music Educators State Convention.
- Miller, J. K. (1999). *Montessori music: Sensorial exploration and notation with the bells*. California: Nienhaus Montessori.
- Milley, J., Buchen, I., Oderlund, A., & Mortatotti, J. (1983). *The arts: An essential ingredient in education*. Mountain View, CA: California Council of Fine Arts Deans.
- Mitchell, N. (Host). (2007, May 5). *All in the mind: Is music the universal language?* [Radio broadcast]. Melbourne: ABC Radio National.
- Montessori, M. (1899). *To educate the human potential* (The Clío Montessori Series). Oxford, UK: ABC-CLIO.
- Montessori, M. (1964). *The Montessori method*. New York: Schocken Books.
- Moore, D. G., Burland, K., & Davidson, J. W. (2003). The social context of musical success: A developmental account. *British Journal of Psychology*, 94(4), 529–49.
- Morgan, S. (1978). A comparative assessment of some aspects of number and arithmetical skills in Montessori and traditional preschools. Unpublished doctoral dissertation, Syracuse University, New York.
- Morton, L. L., Kershner, J. R., & Siegel, L. S. (1990). The potential for therapeutic applications of music on problems related to memory and attention. *Journal of Music Therapy*, 4, 195–208.
- Mrazek, P. B. & Kempe, C. H. (1981). *Sexually abused children and their families*. Oxford: Pergamon Press.
- Nash, M. J. (1997). Fertile minds. *Time* (Feb. 3).
- National Association for the Education of Young Children (1997). Early Intervention Programs, retrieved from <http://www.naeyc.org/about/positions/pdf/PSDAP98.PDF>
- National Association for the Education of Young Children (2001a). *Guidelines for preparation of early childhood professionals*, retrieved from <http://www.naeyc.org/faculty/college.asp>.
- National Association for the Education of Young Children (2001b). *Top 10 signs of a good kindergarten classroom*. Retrieved May 6, 2004, from <http://www.naeyc.org/ece/1996/12.asp>
- National Association for the Education of Young Children (2004, March). Suggested starter equipment for movement curriculums, Beyond the Journal, *Young Children on the Web*. Retrieved July 29, 2008, from <http://www.journal.naeyc.org/btj/200403/PhysicalActivityFitness.pdf>
- National Association for Sport and Physical Education (2004). *Moving into the future: National standards for physical education*, (2nd ed.). National Standards for Physical Education. New York: McGraw-Hill.
- National Reading Panel. (2000). *Report: Teaching children to read*. National Institute of Child Health and Human Development (NIH Publication 00–4769), Washington, DC: Government Printing Office. Retrieved on November 14, 2006, from www.nich.nih.gov/publication/nrp/smallbrook.
- New South Wales Board of Studies (1994). *Otitis media and Aboriginal children: A handbook for teachers and communities*. Sydney, Australia: Board of Studies.
- New South Wales Board of Studies (1995). *Outcomes statements and pointers: English K–10, draft for consultation*. Sydney, Australia: Board of Studies.
- New York City Board of Education. (1980). *Learning to read through the arts, title I children's program*. New York: Division of Curriculum and Instruction, Board of Education.
- Nietzsche, F. (1888). *Twilight of the idols*. "Maxims and Arrows," #33. Retrieved April 8, 2008, from http://en.wikiquote.org/wiki/Friedrich_Nietzsche#Twilight_of_the_Idols_.281888.29
- Nocker-Ribaupierre, M. (1999). Premature birth and music therapy. In T. Wigram & J. De Backer (eds.), *Clinical applications of music therapy in developmental disability, paediatrics and neurology* (pp. 47–65). London: Jessica Kingsley Publishers.
- Noguchi, L. K. (2006). The effect of music versus non-music on behavioral signs of distress and self-report of pain in pediatric injection patients. *Journal of Music Therapy*, 43(1), 16–38.
- Nye, V. T. (1983). *Music for young children* (3rd ed.). Dubuque, IA: William C. Brown Co.
- Oddleifson, E. (1990). *Music education as a gateway to improved academic performance in reading, math, and science*. Washington, DC: Center for Arts in the Basic Curriculum.
- O'Herron, P. & Siebenaler, D. (2006). *The intersection between vocal music and language arts instruction: A review of the literature*. Unpublished dissertation, California State University, Fullerton CA.
- Olsho, L. (1984). Infant frequency discrimination. *Infant Behavior and Development*, 7, 27–35.
- Ostrandra, S., & Schroeder, L. (1979). *Superlearning*. New York: Delacorte Press, 1979.
- Papousek, H. (1996). Musicality in infancy research: Biological and cultural origins of early musicality. In I. Deliège & J. Sloboda (eds.), *Musical beginnings: Origins and development of musical competence* (pp. 37–55). New York: Oxford.

- Papousek, M. (1994). Melodies in care givers' speech: A species-specific guidance toward language. *Early Development and Parenting*, 3(1), 5–17.
- Papousek, M. & Papousek, H. (1981). Musical elements in the infant's vocalizations: Their significance for communication cognition and creativity. *Advances in Infancy Research*, 1, 163–224.
- Patel, A., Iversen, J., & Ohgushi, K. (2004). Cultural differences in rhythm perception: What is the influence of native language? *Proceedings of the 8th International Conference on Music Perception and Cognition*, Evanston, IL: Northwestern University CD-ROM.
- Patel, A. (1998). Syntactic processing in language and music: Different cognitive operations, similar neural resources? *Music Perception*, 16(1), 27–42.
- Patel, A. D. (2003a). Language, music, syntax and the brain. *Nature Neuroscience*, 6(7), 674–81.
- Patel, A. D. (2003b). Rhythm in language and music: Parallels and differences. *Annals of the New York Academy of Sciences*, 99, 140–43.
- Patterson, A. (2003). Music teachers and music therapists: Helping children together. *Music Educators Journal*, 89(4), 35–38.
- Perry, B. D. (2000). The developmental hot zone. *Early Childhood Today* 15(3), 30–32.
- Perry, B. D., Pollard, R. A., Blakley, T. L., Baker, W. L., & Vigilante, D. (1995). Childhood trauma, the neurobiology of adaptation, and 'use dependent' development of the brain: How 'states' become 'traits.' *Infant Mental Health Journal*, 16(4), 271–91.
- Persellin, D. (2000). The effect of activity-based music instruction on spatial-temporal task performance of young children. *Early Childhood Connections* (Fall), 21–29.
- Pestalozzi, J. H. (1976). *Leonard and Gertrude*. New York: Gordon Press Publishers.
- Piaget, J. (1951). *Play, dreams, and imitation in childhood*. New York: W. W. Norton.
- Plato, Jowett, B., & Bulkley, C. H. A. (1883). *Plato's Best Thoughts*, New York: Charles Scribner's Sons, retrieved July 21, 2008, from <http://books.google.com/books?id=3H7ts8406g4C&printsec=frontcover&dq=Plato%27s+best+thoughts>
- Plude, D. J., Enns, J. T., & Brodeur, D. (1994). The development of selective attention: A life-span overview. *Acta Psychologica*, 86(2/3), 227–72.
- Pross, C. (2001). At the side of torture survivors: Treating a terrible assault on human dignity. *New England Journal of Medicine*, 17(345), 1284–85.
- Raebeck, L. & Wheeler, L. (1972). *Orff and Kodaly adapted for the elementary school*. Dubuque, IA: William C. Brown Co.
- Rathunde, K. (2001). Montessori education and optimal experience: A framework for new research. *North American Montessori Teachers' Association Journal*, 26(1), 11–43.
- Rathunde, K. & Csikszentmihalyi, M. (2003). A comparison of Montessori and traditional middle schools: Motivation, quality of experience, and social context. *North American Montessori Teachers' Association Journal*, 28(3), 12–52.
- Rauscher, F. (2004). Can (and should) current music education research influence music education? In S. D. Lipscomb, R. Ashely, R. O. Gjerdingern, & P. Webster (eds.), *Proceedings of the International Conference of Music Perception and Cognition*, 8, 119–21.
- Rauscher, F., & Shaw, G. (1998). Key components of the Mozart effect. *Perceptual and Motor Skills*, 86, 835–41.
- Rauscher, F., Shaw, G. L., & Ky, K. (1995). Listening to Mozart enhances spatial-temporal reasoning: Towards a neurophysiological basis. *Neuroscience Letters*, 185, 44–47.
- Rauscher, F., Shaw, G. L., Levine, L., Wright, E., Dennis, W., & Newcomb, R. (1997). Music training causes long-term enhancement of preschool children's spatial-temporal reasoning. *Neurological Research*, 19, 2–8.
- Rauscher, F. H., & Zupan, M. A. (2000). Classroom keyboard instruction improves kindergarten children's spatial-temporal performance. A field experiment. *Early Childhood Research Quarterly*, 15(2), 215–28.
- Register, D. (2001). The effects of an early intervention music curriculum on prereading/writing. *Journal of Music Therapy*, 38(3), 239–48.
- Register, D. (2004, Spring). The effects of live music groups versus an educational children's television program on the emergent literacy of young children. *The Journal of Music Therapy*, 41(1).
- Reiner, R. (1997). *I am your child: The first years last forever*, hosted by Rob Reiner (Director) & the Reiner Foundation (Producer). (1997). *I am your child: The first years last forever* [VHS Tape]. Washington, DC: The Reiner Foundation.
- Reinhardt, D. A. (1990, Fall). Preschool children's use of rhythm in improvisation. *Contributions to Music Education*, 17, 7–19.
- Renzulli, J. S. (1986). The three-ring conception of giftedness: A developmental model for creative productivity. In R. J. Sternberg & J. Davidson (eds.), *Conceptions of giftedness* (pp. 53–92). New York: Cambridge University Press.
- Richards, M. H. (1977). *Aesthetic foundations for thinking—rethought: Part 1 experience*. California: Richards Institute of Education Through Music.
- Richards, M. H. (1978). *Aesthetic foundations for thinking—Reflection: Part 2*.
- Robarts, J. Z. & Sloboda, J. A. (1994). Perspectives on music therapy with people suffering from anorexia nervosa. *Journal of British Music Therapy*, 8(1), 7–15.
- Robb, S. L. (2003). Music interventions and group participation skills of preschoolers with visual impairments: Raising questions about music, arousal, and attention. *Journal of Music Therapy*, 40(4), 266–82.
- Rockwell, J. (1974). *Fact in fiction: The use of literature in the systemic study of society*. London: Routledge & Kegan Paul.
- Roehmann, F. L., & Wilson, F. R. (1988). *The biology of music making: Proceedings of the 1984 Denver conference*. St. Louis, MO: MMB Music Inc.

- Rorke, M. A. (1996). Music and the wounded of World War II. *Journal of Music Therapy*, 33 (Fall), 189–207.
- Ross, J. A. (1992). Teacher efficacy and the effects of coaching on student achievement. *Canadian Journal of Education*, 17(1), 51–65.
- Salas, J. & Gonzalez, D. (1991). Like singing with a bird: Improvisational music therapy with a blind four-year-old. In K. E. Bruscia (ed.), *Case studies in music therapy* (pp. 18–27). Gilsum, NH: Barcelona Publishers.
- Saunders, T. C. & Baker, D. S. (1991). In-service classroom teachers' perceptions of useful music skills and understandings. *Journal of Research in Music Education*, 39(3), 248–61.
- Schiller, W. & Veale, A. (1996). The arts: The real business of education. In W. Schiller (ed.), *Issues in expressive arts: Curriculum for early childhood* (pp. 5–14). Amsterdam, Holland: Gordon and Breach.
- Schlaug, G. (1999). *Turning up the brain: Music and intellect*. Paper presented at the Learning and the Brain Conference, Boston, MA.
- Schwartz, J. M., & Begley, S. (2002). *The mind & the brain: Neuroplasticity and the power of mental force*. New York: Regan Books.
- Shore, R. (1997). *Rethinking the brain: New insights into early development*. New York: Families and Work Institute.
- Simon, W. (1945). The value of music in resocialization and rehabilitation of the mentally ill. *Military Surgeon*, 97, 498–500.
- Slavin, R. E., Madden, N. A., Dolan, L. J., & Wasik, B. A. (1996). Roots & wings: Universal excellence in elementary education. In S. Stringfield, S. Ross, & L. Smith (eds.), *Bold plans for school restructuring: The New American Schools Designs*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Sloboda, J. (1985). *The musical mind: The cognitive psychology of music*. Oxford: Clarendon Press.
- Sloboda, J. A. (2001). *Emotion, functionality and the everyday experience of music: Where does music education fit?* Paper presented at the International Research in Music Education Conference, England.
- Sloboda, J. A. & Davidson, J. W. (1996). The young performing musician. In I. Deliège & J. A. Sloboda (eds.), *Musical beginnings: The origins and development of musical competence* (pp. 171–90). London: Oxford University Press.
- Sloboda, J. A. & Howe, M. J. A. (1991). Biographical precursors of musical excellence: An interview study. *Psychology of Music*, 19(1), 3–21.
- Smee, E. (2004). *Kodály method: From infants to adults*. A paper presented at a Kodály workshop at the Royal Conservatory of Music, Toronto, Canada.
- Smithrim, K., & Uptis, R. (2001). *Learning through the arts, national assessment, a report on year one*. Unpublished manuscript, Queens' University, Kingston, ON.
- Solomon, M. (1995). *Mozart: A life*. New York: HarperCollins Publishers.
- Soodak, L. C. & Podell, D. M. (1993). Teacher efficacy and student problem as factors in special education referral. *Journal of Special Education*, 27(1), 66–81.
- Standley, J. M. & Hughes, J. E. (1997). Evaluation of an early intervention music curriculum for enhancing pre-reading/writing skills. *Music Therapy Perspectives*, 15(2), 79–86.
- Stein, B. L., Hardy, C. A., & Totten, H. (1982). The use of music and imagery to enhance and accelerate information retention. *Journal of the Society for Accelerative Learning & Teaching*, 7, (4).
- Sutton, J. P. (2002). *Music, music therapy and trauma: International perspectives*. London: Jessica Kingsley Publishers.
- Sutton-Smith, B. (1997). *The ambiguity of play*. Cambridge, MA: Harvard University Press.
- Suzuki, S. (1983). *Nurtured by love: The classic approach to talent education*. Smithtown, NY: Exposition Press.
- Suzuki, S. & Mills, E. (1973). *The Suzuki concept: An introduction to a successful method for early music education*. Berkeley, CA: Diablo Press.
- Sylva, K. (1994). School influences on children's development. *Journal of Child Psychology and Psychiatry*, 35(1), 135–70.
- Tarnowski, S. M. & Murphy, V. B. (2003). Recruitment, retention, retraining, and revitalization among elementary music teachers in Wisconsin and Minnesota. *Update: Applications of Research in Music Education*, 22(1), 15–28.
- Taylor, L. C., Hinton, I. D., & Wilson, M. N. (1995). Parental influences on academic performance in African-American students. *Journal of Child and Family Studies*, 4(3), 293–302.
- Tschannen-Moran, M., & Woolfolk Hoy, A. (2002 April). *The influence of resources and support on teachers' efficacy beliefs*. A paper presented at the annual meeting of the American Educational Research Association, New Orleans.
- Terman, L. M. & Oden, M. H. (1947). The gifted child grows up: Twenty-five years' follow-up of a superior group. In L. M. Terman (ed.), *Genetic studies of genius* (Vol. IV). Stanford, CA: Stanford University Press.
- Thatcher, R., Walker, R., & Giudice, S. (1987). Human cerebral hemispheres develop at different rates and ages. *Science*, 236(4805), 1110–13.
- Thompson, R. A. & Nelson, C. A. (2001). Developmental science and the media: Early brain development. *American Psychologist*, 56(1), (Jan.), 5–15.
- Torrance, E. P., & Safter, H. T. (1990). *The incubation model of teaching*. Buffalo: Bearly Limited.
- Tramo, M. J. (2001). Music of the hemisphere. *Science*, 291(5501), 54–56.
- Trehub, S. E. (2000). Music and infants: Research findings and implications. In *Harmonic development: Music's impact to age three* (pp. 52–67). Pittsburgh: Pittsburgh Symphony.
- Trehub, S. E. (2006). Infants as musical connoisseurs. In G. McPherson (ed.), *The child as musician* (pp. 33–49). Oxford: Oxford University Press.

- Trehub, S., Bull, D., & Thorpe, L. (1984). Infants' perception of melodies: The role of melodic contour. *Child Development*, 55, 821–30.
- Trevarthen, C. & Malloch, S. (2002a). Musicality and music before three: Human vitality and invention shared with pride. *Zero to Three*, 23, 10–18.
- Trotter, R. J. (1987). Growth spurts mirror mental milestones: Cerebral hemisphere development. Research by Thatcher, R. W. *Psychology Today*, 21, 13.
- Tse, M. M. Y., Chan, M. F., Benzie, I. F. F. (2005). The effect of music therapy on postoperative pain, heart rate, systolic blood pressures and analgesic use following nasal surgery. *Journal of Pain & Palliative Care Pharmacotherapy*, 19(3), 21–29.
- Tyler, F. B., Rafferty, J. E., & Tyler, B. B. (1962). Relationships among motivations of parents and their children. *Journal of Genetic Psychology*, 101(1), 69–81.
- Uptis, R., & Smithrim, K. (2001). *Learning through the arts, national assessment, a report on year one*. Kingston, ON: unpublished from Queens' University and the Royal Conservatory of Music.
- Uptis, R., Smithrim, K., Patteson, A., & Meban, M. (2001). The effects of an enriched elementary arts education program on teacher development, artist practices, and student achievement: Baseline student achievement and teacher data from six Canadian sites. *International Journal of Education and the Arts*, 2(8).
- U.S. War Department (1945). Music in reconditioning in ASF convalescent and general hospitals (TB Med. 187). Washington, DC: U.S. War Department.
- Vaughn, K. (2000). Music and mathematics: Modest support for the oft-claimed relationship. *Journal of Aesthetic Education*, 34(3–4), 149–66.
- Verny, T. (1981). *The secret*. New York: Dell Publishers.
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, et al., eds.). Cambridge, MA: Harvard University Press.
- Warren, D. H. (1994). *Blindness and children: An individual differences approach*. New York: Cambridge University Press.
- Weikart, P. S. (1987). *Round the circle*. Ypsilanti, MI: High/Scope Press.
- Weinberger, N. M. (1998b). Brain, behavior, biology, and music: Some research findings and their implications for educational policy. *Arts Education Policy Review*, 99(3), 28–37.
- Weinberger, N. M. (1998a). The music in our minds. *Educational Leadership*, 56, 36–40.
- Weinberger, N. M. (1999b). Lessons of the music womb. *MUSICA Research Notes* 6(1) 1–5.
- Weir, B. (1989). A research base for pre-kindergarten literacy programs. *Reading Teacher*, 42(7), 456–60.
- Whitwell, D. (1997). *Music learning through performance*. Austin: Texas Music Educators Association.
- Willingham, L. (2007). From the mouths of babes: What young children can show us about teaching and learning music—a personal reflection. In K. Smithrim & R. Uptis (eds.), *Listen to their voices: Research and practice in early childhood music*. Toronto, ON: Canadian Music Educators Association.
- Winner, E. (1996a). *Gifted children: Myths and realities*. New York: Basic Books.
- Winner, E. (1996b). The rage to master: The decisive role of talent in the visual arts. In K. A. Heller, F. J. Monks, & A. H. Passow (eds.), *International handbook of research and development of giftedness and talent* (pp. 253–81). New York: Pergamon Press.
- Wood, E. (2004). *International Suzuki Association* (n.d.). Retrieved May 25, 2008, from <http://www.internationalsuzuki.org/shinichisuzuki.htm>
- Woolfolk Hoy, A. & Burke-Spero, R. (2003). *Changes in teachers' feelings of efficacy during the early years of teaching: An exploratory study*. Unpublished manuscript, Ohio State University.
- Young, S. (2003a). *Music with the under-fours*. London: Routledge Falmer.

About the Author

Maureen Harris, an educator and music professional, has dedicated twenty years to the education of the young child. She earned a master's of education at the University of Windsor and studied early childhood music with Dr. Edwin E. Gordon at Michigan State University. Harris is the creator of the early childhood music education programs Montessori Mozarts and Mozart and the Young Mind. She has conducted workshops and presented at conferences for MENC: The National Association for Music Education and the American Montessori Society in the United States; the Royal Conservatory of Music and the Music Therapy World Conference in Canada; and the Mathematical Bridges conference in Great Britain. Her publications include "Music and Math" in *Listen to Their Voices: Research and Practice in Early Childhood Music*, a text for early childhood educators published through the Canadian Music Educators Association; *Montessori Mozarts*, an instructional book for Montessori educators and parents; and this comprehensive early childhood music education book for music graduates and early childhood education graduates.

