LIBERTY UNIVERSITY
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THE IMPORTANCE OF SIGHT-SINGING TO EAR-TRAINING AND MUSICIANSHIP OF NEURODIVERSE STUDENTS

By

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A Thesis and Curriculum Project presented in partial fulfillment

Of the requirements for the degree of

Master of Arts in Music Education

Liberty University

August 7, 2021

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ABSTRACT

This curriculum project aims to recognize the importance of teaching students music with ear-training. The goal is to identify the strengths and weaknesses of ear-training methods. This paper will review existing ear-training methods research. The literature will be reviewed regarding the biology of how listeners hear music, how geographic location influences elements of sound, how emotion influences communication, and why people like the music they like. The second chapter of this article discusses how singing on solfège creates stronger musicianship in all musicians as ear-training is essential for teaching music. Ear-training helps students recognize sounds and sonic events they have heard since they were in their mother's womb. Ear-training also provides a foundation for teaching music.

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CHAPTER ONE

Introduction

Most music educators believe in the importance of teaching ear-training to build a strong foundation upon which music students can hope to become better at music performance. Starting ear-training at an early age will make the process of ear-training more cohesive. It is believed that the foundation of ear-training lies in music theory, which can be thought of like the way music functions. A significant shortcoming of teaching is that a teacher can only teach a subject the way it was taught. Because culture is such a large part of education and music, a teacher can only teach a subject within the culture they know. For example, an American teacher most likely listens to American music based on the western diatonic scale of eight notes. To most people, music based on the western diatonic scale sounds pleasing. Culture and location play a significant role in how the educator teaches music because the theory and ear-training they teach their students will be based on the music the teacher understands. Some musicians and educators believe that the best way to begin ear training and, subsequently, music theory is to teach scales.

The majority of communication humans employ non-verbal. This means that only a slim portion of human communication is spoken or verbal. For the most part, most communication is non-verbal, and only some verbal communication is sufficient for everyday communication. However, there are some circumstances in which people cannot communicate verbally. One of the most common circumstances is performers in the middle of a musical performance. Musicians cannot talk to each other in the middle of a performance, so they employ non-verbal communication such as head nods, moving their bodies, eye-contact, and foot-tapping. It is an established common belief among musicians and musicologists that not only can musicians communicate non-verbally, but the same music heard communicates feelings and emotion

without saying a word. While many people believe music contains emotion, Eduard Hanslick claims music does not have enough power to contain emotion, but rather the listener has a unique and individual reaction to the music.[1] Culture is the foundation of communication. Understanding culture and, therefore, communication can offer insight into how people speak and how they learn and perceive music.[2] Culture can also be to blame for the decline of music literacy because music in popular culture does not employ the same involvement as in previous years.[3] It is believed that the research done for this project will find results proving sight-singing's importance to ear-training and the overall importance of sight-singing to the development of the musician.

Overview of Curriculum

The curriculum is designed to help music educators utilize solfège to help music students become better at sight-singing. Experiential learning theory will be used in the course to create an environment of active learning and doing. As different methods are observed, reflection and experimentation will be incorporated into the classroom. This will give the students experience and application. The curriculum is designed to lead students who are primarily illiterate in sight-singing through practical applications of singing with and on solfège to develop further and strengthen their sight-singing abilities. When designing the curriculum, the goal remains to make students stronger in sight-singing to prepare them to be better musicians. While sight-singing is

[1] Eduard Hanslick, *The Beautiful in Music* (New York, NY: The Bobbs-Merrill Company, 1957), 12.

[2] Eoin O'Carroll, "Pitch Perfect? How Culture Shapes the Way You Hear Music," The Christian Science Monitor, last modified September 27, 2019, https://www.csmonitor.com/Science/2019/0927/Pitch-perfect-How-culture-shapes-the-way-you-hear-music

[3] Harvey Grace, "The Decline of Sight-Singing", *The Musical Times* 84, no. 1203 (1943), 137-139. doi:10.2307/922997

an essential tool to most choral students, many studying music students do not realize the impact a robust sight-singing foundation can have on the success of their music execution.

For instrumental musicians, sight-singing can better prepare them for auditions and, in general, preparation. When musicians begin a new repertoire, some believe that viewing previous performances of the newly acquired piece can help prepare and create a better understanding of performance practices and musical nuances. However, some purist musicians believe watching previous performances impacts the individual musician's interpretation of the piece and are no longer original in its execution. For those purist musicians, strong sight-singing skills will set them up to successfully interpret the new repertoire. Even if not a purist musician, strong sight-singing skills help students and performers internalize new music to perform better. In the classroom, many students get overwhelmed when they see rhythms they have not seen before. With sight-singing solid skills, the student can see the new rhythm, internalize it, perform it accurately or close to how it is supposed to sound.

Problem Solving

One should ask how this skill can be successfully integrated into the music curriculum in sight-singing and its vital importance. Should music educators incorporate solfège and singing on solfège syllables in music classes to adequately increase musical literacy among school-age children? Should music class curriculums be required to teach and incorporate solfège syllables and hand signals to reinforce music theory knowledge thoroughly?

Addressing the first question, at first, it appears too broad or even irrelevant. Music teachers already teach solfège syllables in early music classes. What needs to happen after that, though, is the regular incorporation and use of the solfège. For example, students generally know

nursery rhymes by the time they enter elementary school. The music teacher could sing the song "Twinkle Twinkle, Little Star" with the words and then sing it once more on solfège. Starting with "Do, do, sol, sol, la, la, sol, fa, fa, mi, mi, re, re, do," and so on.

In some states, school districts offer a dual language program where students learn academics in two languages. For example, this author has worked in the Salem-Keizer School District in Salem, Oregon, which offers a dual-language program to students at three elementary schools, two middle schools, and two high schools. Observation in their elementary schools shows the dual-language program students are taught their academics about 80% in their second language (for native English speakers, Spanish is their second language). They eventually increase to 50% of each language by the fourth grade. Students in dual-language programs are not just learning to read, write, and speak the secondary language. The music curriculum also includes history, math, and sometimes even literacy curriculums in their secondary languages. Every language teacher tells their students that the best way to learn a language is to immerse themselves in the language and culture. Why would music be any different? While it looks like symbols on a page, music is a language most understand, no matter where on Earth they are. It is commonly believed by both musicians and educators alike that both students in music perform better academically, and students who speak more than one language perform better academically than students who do not participate in either music or language. Even though many students do not know if they will pursue music beyond their formal education years, equipping them with adequate music literacy skills can open doors for students later in their lives. Students might decide to pursue a career in architecture, but because they learned solfège in elementary music classes (which introduced scale systems, keys, and movable and fixed-do), it gives the student a firm foundation for experimentation in jazz improvisation. If the student

learns how to play the clarinet in fifth grade, they may learn to play the saxophone and have opportunities to play at paid performances on their weekends when they are older. Teachers do not know the impact their teaching will have on their students at the elementary level, but education, while necessary, can sometimes be like the expression, “a pebble in the shoe.” A pebble in someone’s shoe immediately makes the wearer aware that it is there, but it is just planting an idea until the wearer addresses the pebble. Much like sharing the gospel with non-believers, a pebble in the shoe can initially seem annoying, reminding the wearer it is always there, but on a larger scale, planting the idea of salvation could mean the difference in someone’s salvation.

Further Study

This research aims to equip music educators with tools to help all students make physical, emotional, and spiritual connections with music both in and outside of the music classroom. One area that can be studied further is how ear-training and the strengthening of a student's musicianship can help students with identified neurodiversities, such as Autism or Down syndrome, experience music fully and emotionally. Some studies have suggested that people with Down syndrome experience music technically but do not connect with music emotionally.Music educators would be better equipped to teach the whole child if they can fully understand how to help neuro-diverse students experience music. It is also believed that the research will find ways in which music educators can modify their instruction to meet the needs of neurodiverse students in their classes.

The overall goal of the research presented in this project is to strengthen the development of musicians. At the curriculum level, a curriculum was designed specifically to improve a

student’s ability to sight-sing, which is believed to help strengthen ear-training. The literature presented seeks to inform music educators of music's cultural influence on how students learn music on a biological level. The last part of the research will look at ways to help music educators reach the whole child in their classrooms and help students draw connections to music and the outside world.

CHAPTER TWO: LITERATURE REVIEW

Section One: Biology Dictates How We Hear

According to a book about the biological mechanisms in how people hear music, the author claims humans do not actually hear themselves the way they think they hear themselves.[4] People's voices are used in many different ways; physically, air is vibrating on the inside of their bodies.[5] Because of this, a person's voice sounds different in their brain than it does to others.[6] One of the first things humans learn about themselves is how to make a sound.[7] Since babies do not know how to talk and communicate, they imitate the sounds they hear around them, such as talking, vocables, laughter, and crying.[8]

According to a book about culture and music, the authors references a study observing dolphin communication and its similarity to human language when looking at communication overall.[9] Scientists have long understood and believed that dolphins are intelligent creatures, their intellect rivaling that of humans.[10] It stands to reason then that in their similar intellect, their communication is similar to human communication. In their text, *Music as Culture,* Herndon and McLeod reference Jane Goodall and her observations of chimpanzees. Specifically, the similarity to humans in communication is researched.[11] Humans do not only communicate through spoken

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[4] James Beament, *How We Hear Music: The Relationship Between Music and the Hearing Mechanism* (Woodbridge, Suffolk, UK: The Boydell Press, 2005), 54.

[5] Ibid.,, 54.

[6] Ibid.

[7] Ibid.

[8] Ibid.

[9] Marcia Herndon and Norma McLeod, *Music as Culture*. (Darby, PA: Norwood editions, 1982), 10.

[10] Ibid.

[11] Ibid., 10.

language though; even sounds or noises can convey communication.[12] Examples of non-verbal communication are head nods, sighs, or a cough.

According to another book about music's effect on the brain, the author claims humans' taste and musical preferences start in the womb.[13] Levitin references previous studies that have discussed results in which children were found to assimilate to the culture around them, which scientists believe started in the womb.[14] Levitin references another study in which it was discovered that children prefer consonant sounds over dissonant sounds but learn to like and appreciate dissonant sounds as they get older.[15] Levitin suggests there is a neurological reason for people liking consonant sounds more than dissonant sounds, stating, "Neurons in the primary auditory cortex synchronize their firing rates with dissonant sounds, although it is unknown why this creates a preference for consonance."[16]

According to an article about the "Indifference to Dissonance in Native Amazonians Reveals Cultural Variation in Music Perception,"[17] the authors conducted their study in the Amazonian region of Bolivia. The region was chosen based on their little to no interaction with westernized cultures.[18] The authors found in their study that members of the native culture rated

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[12] Herndon and McLeod, 10.

[13] Daniel Levitin, *This Is Your Brain on Music: The Science of a Human Obsession* (New York, NY: Dutton-Penguin Group Publishing, 2016), 222

[14] Ibid.

[15] Ibid.

[16] Ibid.

[17] McDermott et al, "Indifference to Dissonance in Native Amazonians Reveals Cultural Variation in Music Perception." *Nature* 535 (2016), 547-550. https://doi.org/10.1038/nature18635

[18] Ibid.

dissonant and consonant sounds the same.[19] The authors believe the native's similar rating of consonance to dissonance is due to their distance from and lack of interaction with westernized cultures.[20] While the authors studied natives in the Bolivian region, they found the participants to prefer consonant sounds still, but not as much as their American counterparts.[21]

In an article about how culture influences the way people perceive music, the author found data from a study on the Tsimane tribe in Bolivia about consonant and dissonant sounds.[22] Author Eoin O'Carroll reported what while people in the United States can often reproduce a song or string of pitches either perfectly or in a different octave, members of the Tsimane tribe were only able to make sound within just a few pitches.[23] Scientists involved in the study believe part of this was due to the differences between American culture and the Tsimane tribe, specifically, how they approach music and performances.[24] For example, western music is sometimes performed in groups or ensembles, all playing different sounds or tones simultaneously, whereas music in the Tsimane tribe is often performed alone.[25] Researchers found it interesting that even though the Tsimane have lower sounds than western music, their auditory limit and what they can hear are about the same.[26]

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[19] McDermott et al., 547-550,

[20] Ibid.

[21] Ibid.

[22] Eoin O'Carroll, "Pitch Perfect? How Culture Shapes the Way You Hear Music," The Christian Science Monitor, last modified September 27, 2019, https://www.csmonitor.com/Science/2019/0927/Pitch-perfect-How-culture-shapes-the-way-you-hear-music.

[23] Ibid.

[24] Ibid.

[25] Ibid.

[26] Ibid.

In an article describing the biology behind how people hear and perceive sound, the auhtor claims how people distinguish sound due to cochlear tuning.[27] Cochlear tuning is the explanation of how the inner ears recognize different sounds and pitches.[28] Oxenham suggests that each pitch is correlated with a specific location on the basilar membrane in the inner ear.[29] When a specific frequency (pitch) is played, the basilar membrane responds.[30] Oxenham claims that pitch perception defines a melody in music, but in spoken language, pitch perception helps people recognize and identify who is speaking.[31] The idea of pitch discussed is referring to specific frequencies of sound.

Section Two: Different Elements of Sound Come from Different Locations

In a book describing how music is part of identity, the author discovered that jazz was born in New Orleans in the nineteen-twenties while researching different music genres.[32] The author claims that as music critics began to analyze and listen to new music, they quickly labeled African music as "popular" while the label of "serious" music was reserved for European music.[33] In this regard, "popular" was used because music critics felt the music lacked interest and was only about trends.[34] The music critics used the term "serious" to describe the music they

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[27] Andrew J. Oxenham, "How We Hear: The Perception and Neural Coding of Sound," *Annual Review of Psychology*, 69 (2018), 29.

[28] Ibid., 29.

[29] Ibid.,, 29.

[30] Ibid.,, 29.

[31] Ibid., 31.

[32] Simon Frith, *Music and Identity*, (London: Routledge, 2006), 119.

[33] Ibid., 119.

[34] Ibid., 119.

thought was above trends and would be relevant despite its age.[35] Because of this dangerous labeling, a stigma was formed against the origins of cultural music.[36] Frith stated, "People produce and consume the music they are capable of producing and consuming."[37] Because of this, people of different regions can incorporate their cultural sounds into music.

In a book by Kenneth Negus, when analyzing popular music and theory, the author claims music has an identity of either "black" music or "white" music. Similar to Frith's discovery, this created a stigma around different types of music. According to Negus, "black" music was considered performance music, and "white" music was considered composition music.[38] Negus describes black music as being the music that is informal and candid, whereas "white" music is reserved and performed exactly as it is written.[39]

In a Burton Peretti's book describing the origination of jazz music, he discovered that jazz music is heavily influenced by Afro-Caribbean roots and was born in New Orleans, Louisiana.[40] Some of the Afro-Caribbean elements present in jazz music are improvisation, blues harmony, and syncopation.[41] Afro-Caribbean religion, culture, dance, and Sunday slave

[35] Frith, 119.

[36] Ibid., 119.

[37] Ibid., 119.

[38] Keith Negus, *Popular Music in Theory: An Introduction,* (Cambridge: Polity Press, 1996), 100-102.
[39] Negus, 102.

[40] Burton Peretti, *The Creation of Jazz: Music Race, and Culture in Urban America,* (Chicago, IL: University of Illinois Press, 1994), 22.

[41] Ibid., 22.

dances are also a few elements that influence jazz music.[42] French and Spanish dance, military bands, as well as opera influenced jazz music as well.[43]

Section Three: Emotion Dictates How We Communicate

In a book describing the nature of musical aesthetics, the author claims music itself does not contain emotion because he believes making someone feel something or experience emotion is far too great for musical responsibility.[44] The author suggests that previously formed judgements and ideas cause people to have an emotional response to music.[45] These judgments happen so fast that people think the music itself is beautiful, underestimating that their intelligence is analyzing the music rather than just beauty.[46] Not only do these judgments dictate how listeners hear the music, but it also dictates how musicians perform music as well.[47]

In Jolij and Meurs article depicting how music and sound affect visual perception, they introduce the concept that a person's type of music will directly influence how they perceive the world around them.[48] To explain this concept, the authors describe Bayesian priors, which in psychology, are previously formed perceptions that tell the brain how to interpret situations.[49]

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[42] Peretti, 22.

[43] Ibid., 23.

[44] Eduard Hanslick, *The Beautiful in Music* (New York, NY: The Bobbs-Merrill Company, 1957), 12.

[45] Ibid.,, 21.

[46] Ibid., 11.

[47] Ibid., 21.

[48] Jacob Jolij and Maaike Meurs, "Music Alters Visual Perception," Plos One, last modified April 21, 2011. https://doi.org/10.1371/journal.pone.0018861

[49] Ibid.

According to the authors, Jolij and Meurs, Bayesian priors are why people can correctly identify emotions on people's faces.[50] Bayesian priors are also why people listen to the music of an associated emotion; they are more likely to experience that emotion and recognize that emotion in situations around them. It is believed then that the music a person listens to directly dictates how they perceive a situation.[51]

Section Four: Explaining Why People Like Their Preferred Music

Relating music to the mind and music and the mind to meaning, Marvin Minsky found that people are trained to think they prefer one thing over another.[52] The author states, "The anatomy is too obscure without embryology."[53] The author then suggests that music stimulates the imagination, appearing as thoughts that fade too quickly.[54] He claims previous knowledge is subconsciously awakened when people listen to music.[55] The author proposes that music can be used to help a bad mood because he claims that when people have a sad or bad thought, if they listen to music, their energy would instead be used for listening to music, meaning energy is no longer going to the hurtful thoughts in the head.[56]

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[50] Jolij and Meurs

[51] Ibid.

[52] Marvin Minsky, "Music, Mind, and Meaning," Massachusetts Institute of Technology Artificial Intelligence Laboratory, Massachusetts Institute of Technology, last modified February 1981, 2

[53] Ibid.

[54] Ibid., 3.

[55] Ibid.

[56] Ibid., 5.

In a book about culture and music, the author wrote a chapter on music, psychology, and ecological theory, which analyzes and depicts what goes into a single musical performance.[57] Elements like pitch perception, timbre, acoustics, rhythm, and neurology play a critical role in musical performances.[58] Through this, it was Clarke's goal to figure out why people like the music they like, and what he found was that it came down to biology.[59] As with almost anything, people like what they like because a portion of their brain becomes satisfied.[60] Clarke focuses mainly on the psychology in music and realizes there is a cultural significance in how people hear music.[61] Clarke suggests music should be listened to in a wholly ecological or neutral environment.[62] Many people do not realize the minutiae of actions that go into a single experience, and Clarke has outlined precisely how these actions influence a listener's experience with music.[63]

In Nicholas Cook's book about music, culture, and imagination, theis author claims that explaining why people like specific music is difficult.[64] Biologically, it is reduced to what parts of the brain are stimulated and happy.[65] For the most part, the simple answer to why people like

[57] Eric Clarke, "What's Going On? Music, Psychology, and Ecological Theory," *The Cultural Study of Music: A Critical Introduction*, (New York, NY: Routledge, 2012), 336.

[58] Ibid., 336.

[59] Ibid., 336.

[60] Ibid., 336.

[61] Ibid., 336.

[62] Ibid., 337.

[63] Ibid., 337-338.

[64] Nicholas Cook, *Music, Imagination, and Culture*, (New York, NY: Oxford University Press, 1990), 188.

[65] Ibid., 188.

music is because of personal preference.[66] Cook compares architects to how they use culture to guide them to make empirical decisions, to composers, claiming composers do the same.[67] Cook claims composers do this because they think about how the listener's culture will influence how they hear the music.[68] Cook also talks about how composers may use a piano to write an orchestral piece, but they have to ignore certain hallmarks of the piano, knowing it will translate well for the overall sound of the orchestra.[69]

In a book examining music's interaction with the brain, the author found studies conducted on people who had recently had a brain injury, such as a concussion, a stroke, a coma, or so on.[70] The results he found offered that after people had suffered from some sort of brain injury, they no longer enjoyed the music or had any sort of interest in it.[71] In the cases the author discussed, all of the people who had suffered from a brain injury eventually liked or appreciated music again, but for some, it took days or months to like music again.[72] Noticing they all had something in common, a brain injury, the author hypothesized if people with brain abnormalities in the form of learning disabilities experienced music differently than people who do not.[73] The author recalled a conversation he had with a friend who has Asperger's and how the friend

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[66] Cook, 188.

[67] Ibid., 188.

[68] Ibid., 188.

[69] Ibid., 189.

[70] Oliver Sacks, *Musicophilia: Tales of Music and the Brain*, (New York, NY: Vintage Books-Random House Publishing, 2008), 314-316.

[71] Ibid.

[72] Ibid.

[73] Ibid., 318.

described the great intellectual pleasure they got from listening to a piece of music but were not able to describe any emotional pleasure they got from the piece because they did not get any emotional pleasure from listening to the piece.[74] The author claims, "There is some evidence that … the amygdala… may be poorly developed in people with Asperger's."[75] He then thought this would be the case for all people with Autism but recalled a time he worked with young adults with Autism in the 1970s who instead liked the music and responded emotionally to music Sacks performed.[76]

In a book about how to master music, the author Barry Green describes three different passions people have.[77] He first describes a passion for life, which a person learns to love, a passion for music, which he describes as music's ability to express one's soul, and lastly, a passion within the music.[78] This passion, Green claims, comes from the composer and the person performing the piece.[79] The importance of passion in music is what makes the music experience whole. Most people do not want to listen to music lacking passion because it will not feel anything. People want to feel something when they listen to music. Most importantly, Green claims, "Music touches feelings words cannot."[80]

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[74] Sacks, *Musicophilia*, 318.

[75] Ibid.

[76] Ibid.

[77] Barry Green, *The Mastery of Music: Ten Pathways to True Artistry*, (New York, NY: Broadway Books-Random House Publishing, 2003), 118.

[78] Ibid., 118-122.

[79] Ibid., 122.

[80] Ibid.

In an article about the physicality and theory of music, author Carolyn Abbate defines the separation between where music goes from being drastic to being gnostic.[81] Abbate describes the difference between the two as gnostic being a mystical knowledge, or what she refers to as "elite knowledge" and is considered music theory, and the Drastic is physical knowledge gained from actions and experiences such as performing or listening to music.[82] Abbate describes the difference between music in practice and theory, each representing drastic and gnostic, respectively.[83]

Throughout the articles and book excerpts, it is abundantly clear that the process of doing and learning music is based on influences in a person's life that they cannot comprehend. From biology to culture to science, every aspect influences how a person hears music and influences how they make music. This research needs to be kept in mind when presenting concepts and materials of music to students when trying to teach them aural skills and ear-training.

[81] Carolyn Abbate, "Music--Drastic or Gnostic?," The University of Chicago Press Journals, *Critical Inquiry*, vol. 30, no. 3, (spring 2004), 509. https://www.jstor.org/stable/10.1086/421160

[82] Ibid., 509-510.

[83] Ibid., 510.

CHAPTER THREE: METHODOLOGY

The purpose of this chapter is to present the material found that supports the emotional, cultural, and geographic influences on students learning ear-training and how it makes them stronger musicians, as well as material that supports that students of identified neurodiversities can interact with and experience the whole experience of music.

A British study conducted in 2008 questioned whether social and cognitive deficits curtail musical understanding.[84] The study consisted of one hundred eighty children between the ages of four, ten and roughly thirty adults. Of the roughly 180 children involved in the study, approximately 43 were previously diagnosed with either Autism or Down Syndrome. The results of the study will be discussed in chapter 4.

All testing done on children was conducted at the child's school. The participant was tested in a quiet and individual room for each child and adult involved in the study. Researchers administered a test placing five pictures that represented either a feeling in the first condition or a movement in the second condition in front of the participant. The participant was told that they would hear a musical excerpt related to one of the pictures. For each picture, two musical excerpts correlated with it. The excerpts were presented in a randomized cycle.[85]

For the second experiment, children identified as having been formally diagnosed with either Autism or Down Syndrome participated. The parameters of the second experiment were similar to the first condition. Experiment proctors played a recording of a selection of music that correlated with one of the five feeling and movement cards. The recordings of the musical

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[84] Pamela Heaton et al., "Do Social and Cognitive Deficits Curtail Musical Understanding? Evidence From Autism and Down Syndrome", *British Journal of Developmental Psychology* 26, no. 2 (2008), 171-182. doi:10.1348/026151007x206776.

[85] Ibid., 176.

selections were provided by the Royal Philharmonic and Philharmonia Orchestras. Although instead of selecting a picture when hearing the musical excerpt, participants would say the first word they thought. The British Picture and Vocabulary scales were used.[86] Participants were tested individually in quiet rooms. Participants were recruited from schools where admittance was specifically for students with Autism or severe learning disabilities if they had Down Syndrome.[87]

The above discovery is of considerable importance to music teachers because every teacher has the same educational goal of teaching "the whole child," which is every student they have. Most classrooms, whether homerooms or specials classes are diversified in learning ability. Most people understand what it means to have a neuro-diverse student in a homeroom class where the student can learn with an instructional assistant or be assigned less classwork than their peers, but for the general public to imagine a neuro-diverse student in a specials class such as music, people have a more challenging time imagining that. Music teachers want all of their students to experience music fully, love music the way it was intended, and love music the way the instructor does. Most music educators want all of their students to experience and have genuine spiritual, emotional, and physical connections with music the way they believe God intended. In many cases, music can heal people, which is why it is employed in different therapies.

While only one study is presented for this project, the researcher believes it perfectly encapsulates what the researcher sought to find and prove. This study had different conditions in which both neurodiverse and non-neurodiverse students and individuals were tested in a music

[86] Heaton et al., 176.

[87] Ibid.

environment. The conditions were non-invasive and allowed for accurate results with little to no interactions in the results. With only one study presented, the researcher believes that more and similar research on this subject exists, and many readers can use the findings from the studies to augment their lessons and plans that show the capabilities and understanding of the limits of neurodiverse individuals in a music classroom setting.

CHAPTER FOUR: RESULTS

A British study conducted in 2008 found that children identified as having either Down Syndrome or Autism could recognize the movement portrayed in an excerpt of music, the same as either non-musical adults and non-Autistic and non-Down Syndrome children. Not only were they able to identify movement, but they were also able to identify when musical selections depicted emotions. It was found inconclusive whether or not children with Autism and Down Syndrome experienced the emotions depicted or just identified that the emotions were in the music.[88]

The study results above found that six-year-old participants had a higher percentage rate of correctly guessed feeling and movement states based on a musical selection than the study's four-year-old participants. There were no significant differences between the percentage of correctly guessed feeling and movement states for the eight-year-old participants, ten-year-old participants, and adult participants. The authors of the study claim this means that appreciation for musical meaning increases linearly until one reaches about eight years of age. After one reaches eight years old, their musical meaning appreciation is roughly the same as non-musically trained adults.[89]

In a separate article from May of 1943, author Harvey Grace writes about the decline of musical literacy in schools and students long before the present.[90] In the article, Grace suggests schools and choral groups compete at the local and state levels in festivals and competitions

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[88] Heaton et al., 171-182.

[89] Ibid., 171-182.

[90] Harvey Grace, "The Decline of Sight-Singing", *The Musical Times* 84, no. 1203 (1943), 137-139. doi:10.2307/922997.

where there is a performance portion of the competition and a sight-singing portion of the competition, which will be judged and included in the group's overall performance score.[91]

Grace also briefly suggests that students and young adults had a better understanding of music because of their involvement in church, music in the home, and sometimes even music in the military.[92] Grace does not explain why he thinks the decline in not only sight-singing but also music literacy is sudden but points out that in the schools, he noticed two generations of students lacking in music literacy. He claimed that students in school no longer knew how to read music, create their harmonies, and be taught simple music by hearing it first sung or played to them before they could repeat it. Grace did not say how but claimed that sight-singing helped choral training, indirectly suggesting that students who can sight-sing made for better choral musicians.[93]

In an article dedicated to learning strategies in ear training, author Hilde Synnøve Blix claims that those strategies students use for procedures such as dictation depend on the intended learned task, such as writing a score or musical sound.[94] This means that students will employ different strategies and efforts for dictation, depending on whether the prioritized goal was musical sound or the accuracy of the score. Blix references the book *Musical Excellence* by Thompson and Lehman, in which the authors discuss the importance of sight-singing and how it impacts a musician's sight-reading and improvisational skills. For example, if a musician is

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[91] Grace, 138.

[92] Ibid., 137.

[93] Ibid., 138.

[94] Hilde Synnøve Blix, "Learning Strategies in Ear Training", *Aural Perspectives. On Musical Learning and Practice In Higher Music Education* (2014), 101. http://hdl.handle.net/11250/274211.

tasked with sight-reading in an audition or competition, they can look at the score in front of them and sing what they wish to play. If a musician cannot sight-sing, they will not execute the passage correctly.[95] Blix outlines the different strategies students should be used in music, such as cognitive, auditory, metacognitive, social, memory, compensatory, and practical strategies.

Cognitive strategies are how the learner used their learning. This includes but is not limited to analyzing, comparing, verbalizing, and researching. Auditory strategies are how the learner approaches music by listening in different ways.[96] This includes moving one's own body, discriminating sound, and focusing on different aspects of the music they hear. Metacognitive strategies are strategies that the learner uses to define how they learn and how they think. Some examples include writing in a journal or talking about how they plan to learn something.[97] Social strategies concern the learner's interaction with other people as part of their learning process. This includes sitting in a classroom, asking questions, and working with other people. Memory strategies are how the learner memorizes music. Learners can memorize a notated score, memorize a sound, and play from memory or by ear. Compensatory strategies are how the learner compensates for gaps in their knowledge. The learner usually has to guess the subsequent actions and sometimes trigger their memory by acting out fingerings on their instrument. Affective strategies are the learner's ability to manage stress and anxiety in given situations.[98]

The two research questions asked in chapter one are repeated here: Should music educators incorporate solfège and singing on solfège syllables in music classes to adequately

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[95] Blix, 104.

[96] Blix, 108.

[97] Blix, 110.

[98] Blix, 108-112.

increase musical literacy amongst school-age children? Should music class curriculums be required to teach and incorporate solfège syllables and hand signals to reinforce music theory knowledge thoroughly? Across the research presented here, the answer to both questions is a resounding “yes.” Not only does solfège give students syllables to sing on, but it also provides them with an auditory example of the step-by-step vision they see when thinking of music in terms of major, minor, modes, and chromatics. While it might not be feasible to present solfège to kindergarteners, it might be more realistic to present solfège in the upper elementary grades, starting around the fourth grade.

CHAPTER FIVE: CONCLUSION

The main question asked is whether sight-singing should be taught in music classrooms to improve the music literacy of students. One of the most effective ways to teach sight-singing is through the use of solfège. Through the research presented in this paper, it is apparent that most of the authors agree that sight-singing should be taught in schools. Sight-singing not only helps choral students, but as Hilde Blix referenced a book by Thompson and Lehman, sight-singing helps instrumental musicians as well.[99] Specifically, it helps musicians with their sight-reading and improvisational skills.[100]

In chapter two, much material was discussed to explain the biological nature of why humans like music, how they enjoy it, or what music they find pleasing. Most of that literature was the history behind music's importance to humans and culture in general, but ultimately leading to why music should be included in schools. Chapter three introduced the importance of sight-singing and an essential look at neurodiverse individuals and how they experience music. This one aspect is of utmost importance to many educators because it holds answers to how educators can teach the whole child and how each child can have positive interactions with music. In chapter four, more literature was introduced and discussed on the importance of sight-singing, ear-training, and how both benefit all musicians.

The significance of this research and the organizing of the findings are better to equip music teachers for the present classroom circumstance. By highlighting sight-singing's importance in the music classroom, the goal is to get all schools to consider including solfège and ear-training in all music classroom curriculums. While many people may only see the benefit

[99] Blix, 104.

[100] Blix, 104.

of ear-training and sight-singing in the secondary grades, it can also benefit primary music classrooms as ear-training can help students in how they approach the learning of music.

One of the main limitations to this and further research is that students do not remain in music classes for the same length of time. Some school districts only require music classes up to grade five, while others may require students to be in music class through grade seven. There is also the most significant limitation in that some students remain in music through their collegiate years, in which case, so much time has passed during their acquisition of knowledge that they may not remember previous music learning strategies when compared to their non-musical counterparts or students who quit music after the required age.

Something to consider studying in the future regarding the importance of sight-singing and ear-training in the future would be justifying the importance of the priority of teaching these strategies in primary music classes. Teachers of every subject agree that there is not enough time to teach all the things they think are essential, so how can they justify spending so much time on solfège, sight-singing, and ear-training at such a young age when the current trends in society do not seem to support the time investment? With most students not pursuing music beyond their school years, each school and district must decide if funds will be dedicated to teaching a specific curriculum branch in an already limited environment.

So far, the research and literature presented in this project has supported the importance of sight-singing to ear-training and the overall development of the musicianship in each student. While the research and literature did not provide unique ideas for modifying lessons to reach the whole child, it did explain what neurodiverse students experience in a music setting. With this knowledge, it is the goal that music educators are aware of the limits of musical understanding in neurodiverse individuals, but also what these students are capable of understanding and grasping

in the music setting so that they can have a holistic experience with music and make emotional, physical, and spiritual connections with music both in and outside the music classroom.

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APPENDIX A

COURSE SYLLABUS

NAME OF COURSE: SIGHT-SINGING ON SOLFÈGE

COURSE DESCRIPTION

This course is designed to arm the students with concepts and practices that will help them prepare. Not only will we focus on preparation, but also on God's will for the singer, and God's intention with song and music. Concepts learned in this course will be applied in ensemble classes, as well as many other music settings.

Rationale

The purpose of this course is to help students become stronger musicians by focusing on how they prepare. This is a required course and pre-requisite for all students that want to be in the concert choir. This class works in tandem with the Music Theory I course that introduces music students to the theory and structure of music.

I. PREREQUISITES

None

II. REQUIRED RESOURCE PURCHASE(S)

None, but students will be using the *Essential Musicianship: Essential Elements for Choir* text in class

III. ADDITIONAL MATERIALS FOR LEARNING

None
Essential Musicianship: A Comprehensive Choral Method

IV. MEASURABLE LEARNING OUTCOMES

Upon successful completion of this course, the student will be able to:

A. List Solfege syllables

B. Identify intervals in a scale

C. Demonstrate knowledge of Solfege and intervals by singing a scale

D. Experiment with different sounds, melodic intervals, and foreign concepts of music

E. Select new repertoire each week with the sole purpose of sight-singing

F. Be able to sight-sing on solfège

V. COURSE REQUIREMENTS AND ASSIGNMENTS

A. In-class attendance and participation

Students are required to come to class and are encouraged to actively participate

B. Quizzes

There will be 4 randomly timed quizzes throughout the course.

C. Test

There will be one cumulative sight-singing test at the end of the course. Students will be graded on correct solfège syllables, pronunciation, and pitch accuracy. Students will be tested on major-scale solfège, minor-scale solfège, and be given a short excerpt to sight-sing.

VI. COURSE GRADING AND POLICIES

A. Points

Daily Participation (given at end of semester)	40
Quizzes (4 at 15 pts each)	60
End of Unit Test	100
TOTAL:	**200**

B. Scale

A = 940–1010 A- = 920–939 B+ = 900–919 B = 860–899 B- = 840–859

C+ = 820–839 C = 780–819 C- = 760–779 D+ = 740–759 D = 700–739

D- = 680–699 F = 0–679

C. Late Assignment Policy

Late assignments will be accepted up to two weeks after assigned. Assignment grade will be deducted 5% each week it is late. Make-up work will be allowed. Students will have the number of days absent, plus one, to turn in any make-up work.

CURRICULUM PROJECT – ANALYSIS CHART

PART I: CURRICULUM INFORMATION

Student: Courtney Stinson	**Course for which you are creating curriculum: Sight-Singing on Solfège**
Required Textbook for Class (at least two textbooks should be entered with complete information in Turabian style): *Essential Musicianship: Essential Elements for Choir* (EE) Book Two: A Comprehensive Choral Method Crocker/Leavitt (Hal Leonard Corporation)	
Identify the problem: *(What does the student not know how to do? What is the student's gap in the training or experience?)*	
The student must demonstrate the ability to sight-sing.	
Who are the learners and what are their characteristics? *(Age, major, pre-requisites, residential, online, or a hybrid of the two)*	
7th-12th grade students in a small private Christian school, ranging in age from 12-18 years, meeting residentially every day.	
What is the new desired behavior? *(Overall, what is the main change or new addition to the student's demonstrated ability?)*	
The student will be able to sight-sing.	
What are the delivery options? *(Explain the materials you will develop for the course.)*	
This is a residential course that meets Monday-Friday, for 47 minutes.	
What are the pedagogical considerations? *(Describe your general content and methodology for the course.)*	
The course will address different singing methods and styles while applying aural skills and musicianship.	
What learning theory applies to your curriculum? Why?	
Experiential learning theory will be used in this course to create an environment of active learning and doing. As we observe different methods, we will incorporate reflection and experimentation in the classroom. This will give the students experience and application.	

Part II: Learning Outcomes

Learning Outcomes **IMPORTANT: Make sure that you begin each of the learning outcomes with an action learning verb from Bloom's Taxonomy. Also, make sure that the action learning verbs you selction begin with the left hand side of the column, and then choose your next learning verb from the next column to the right (move from left to right).** **At the end of the course, the student will be able to:**
1. List musical styles/genres and define them. List solfège syllables
2. Identify intervals in music and learn how to sing them Identify intervals in a scale.
3. Demonstrate correct singing technique by implementing correct posture and breathing. Demonstrate knowledge of Solfege and intervals by singing a scale
4. Experiment with different sounds, melodic intervals, and foreign concepts of music.
5. Select repertoire that has identified intervallic patterns. Select new repertoire each week with the sole purpose of sight-singing

CURRICULUM PROJECT: DESIGN CHART

First: Evaluate the Analysis Chart and Learning Outcomes

Student: Courtney Stinson	**Course for which you are creating curriculum:** Sight-Singing for Secondary Choir - RESIDENTIAL
Concept Statement: Learning solfege will help singers become better at sight-singing and prepare them overall for vocal success	

Learning Outcomes *(List in the order you plan to address in 12 weeks)*	**Content** *(What must be learned to reach this objective?)*	**Learning/Training Activity** *(How will you teach the content?)*	**Assessment** *(How will you know that the student has met the objective?)*
1. List Solfege syllables	Week 1: • Learning and listing 7 main solfege syllables Week 2: • Learning and listing the remaining secondary solfege syllables	Week 1: • *Masterclass – Solfege basics Week 2: • Building on week 1 masterclass	Week 1: • Informal oral quiz, have each student say solfege syllables as you walk around the room Week 2: • Informal oral quiz
2. Identify intervals in a scale	Week 3: • List whole and half steps • Identify whole and half steps in a scale Week 4: • Review whole and half steps in a scale • Identify whole and half steps on a piano to make the scale visual Week 5: • Experiment with major,	Week 3: • *Masterclass – Basic music theory, using the Essential Elements for Musicianship textbooks Week 4: • *Masterclass in the piano lab to reinforce whole and half steps, as well as identifying notes on a piano, matching pitch Week 5:	Week 3: • Have students write a scale in terms of intervals Week 4: • Praxis application • Peer-reviewed feedback Week 5: • Praxis application

	minor, and modal scales	• Small group practice, around a piano and matching pitch	• Peer-reviewed feedback • Quiz
3. Demonstrate knowledge of Solfege and intervals by singing a scale	Week 6: • Define a western diatonic scale Week 7: • Define scales from around the world	Week 6: • Present "Why Ms. S Loves Theory" slideshow and go through different scales from around the world Week 7: • Review scales from around the world • Small group practice singing scales form around the world	Week 6: • Perform "note check" as exit assignment in class Week 7: • Group assignment, assign each group a scale and have whole group sing and teach the class that scale
4. Experiment with different sounds, melodic intervals, and foreign concepts of music	Week 8: • Distinguish between vocal terminology Week 9: • Write solfege syllables in choir repertoire Week 10: • Reinforce basic music theory	Week 8: • *Masterclass on different parts of the voice Week 9: • Personal practice time Group Practice/warming up Week 10: • *Masterclass on music theory including major and minor keys and how to recognize them	Week 8: • Praxis application • Peer-reviewed feedback Week 9: • Check each student's music for solfege syllables written in their parts Week 10: • Notes check

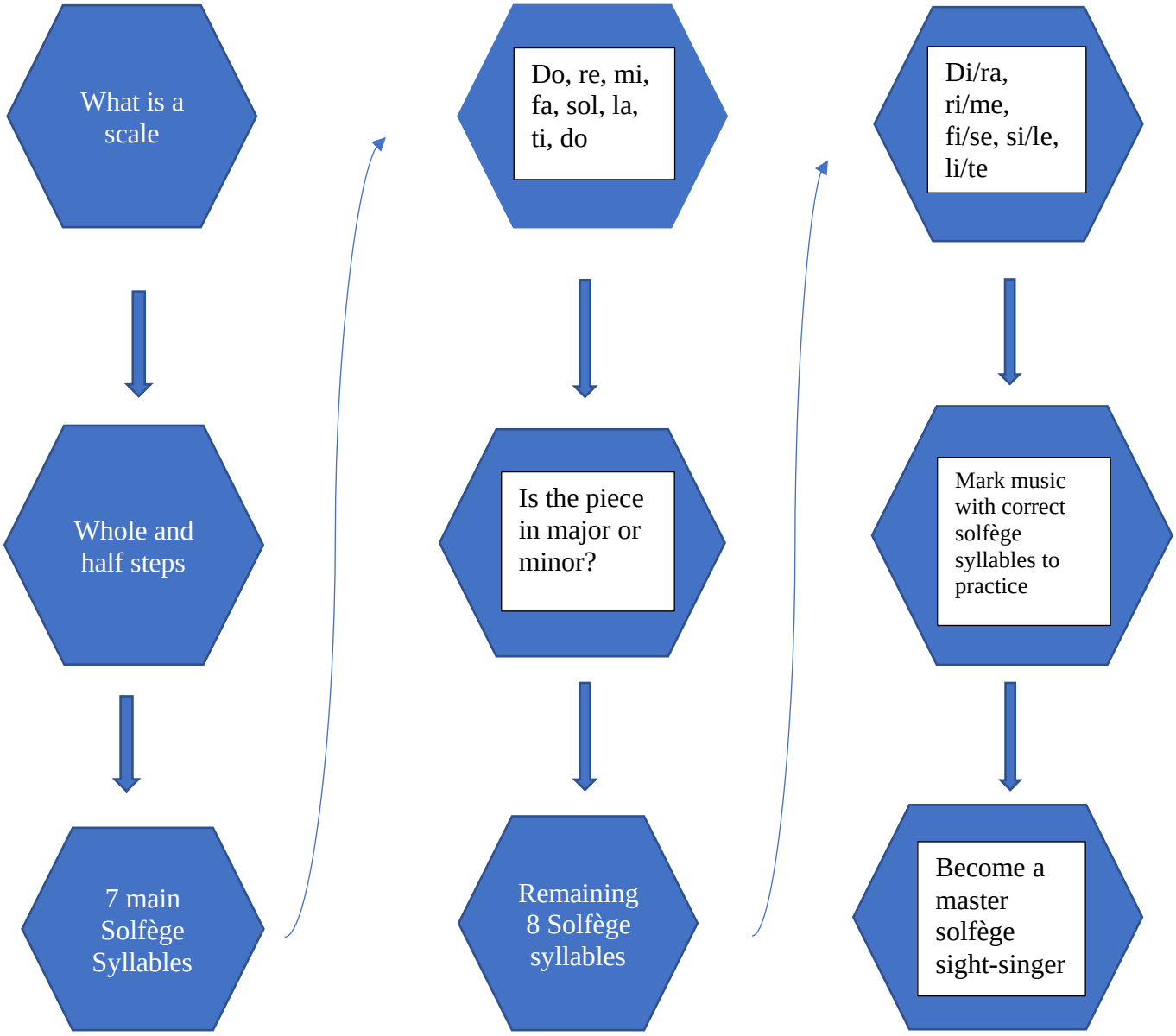
5. Select new repertoire each week with the sole purpose of sight-singing	Week 11: • Review solfege and major/minor keys Week 12: • Select new music just to sight-sing, then put away once done	Week 11: • Small group practice • Review masterclass from week 10 Week 12: • Personal practice time • Small group practice • Discuss Biblical truths about music as a characteristic of Heaven	Week 11: • Listen to small groups as they practice • Week 12: • Sight-singing in class!

Learning Outcomes *(List them in the order you plan to address during the 12 weeks of curriculum.)*	**Rational for Sequence** *(Describe why you believe this sequence is the most effective.)*
1. List Solfege syllables	Students familiarizing themselves with solfege syllables will help them build a solid foundation of vocal memory
2. Identify intervals in a scale	Being able to draw connections between whole and half steps, as well as their corresponding solfege syllables will make singers stronger in their sight-singing abilities
3. Demonstrate knowledge of Solfege and intervals by singing a scale	Being able to sing a scale with good intonation is a result of identifying the connections between intervals and solfege steps
4. Experiment with different sounds, melodic intervals, and foreign concepts of music	Assigning solfege syllables to notes in their choral repertoire will help reinforce their muscle memory as they learn and prepare performance repertoire
5. Select new repertoire each week with the sole purpose of sight-singing	Sight-singing new music each weeks informally tests and reinforces the student's knowledge and comfort with solfege

CURRICULUM PROJECT: DEVELOPMENT CHART

Student: Courtney Stinson	**Course for which you are creating curriculum: Sight-Singing with Solfège**
*Consider the 3 advance organizer methods below. You must create an advance organizer for **each** method below to use as a pre-instructional strategy (to prepare the student to link what they **do** know to what they **do not** know).*	
Expository *(You are verbally describing the new content you are about to cover; enter below what you will say)*	
"Happy Monday, class! You already know the 7 main solfège syllables, but today we will be learning about the remaining eight syllables, that we use when we encounter accidentals, when we're in a minor key, or sometimes if we're in modes. We already know the syllables for a major scale, Do-Re-Mi-Fa-Sol-La-Ti-Do but now we're going to learn Di/Ra, Ri/Me, Fi, Si/Le, and Te. While we are learning these, not only will you be writing them out, you will also have a chance to sue a piano graphic, or a piano keyboard to practice seeing these new syllables for intervals you already know, but to also hear them and reinforce your chromatic scale knowledge.	
Narrative *(You are presenting the new information in a story format; enter below what your "Story" will be.*	
We're going to each sit down either at a keyboard or have the piano whiteboard in front of you so you can visually see where these solfège syllables lie. Go ahead and refresh yourself with the major scale solfege for about thirty seconds. To make things easy, let's use the key of C, all white keys. All of the black keys are our new solfège syllables. Let's now play a chromatic scale while saying our new solfege syllables. Do-Di-Re-Me-Mi-Fa-Fi-Sol-Si-La-Te-Ti-Do. Excellent! Now, going down, we're going to use two different solfege syllables. Let's try it. Do-Ti-Te-La-Le-Sol-Fi-Fa-Mi-Ri-Re-Ra-Do. Did anybody notice the different syllables? We had Le instead of Si, Ri instead of Me, and Ra instead of Di. Even though we used different solfege syllables, they still represent only a half-step between the notes both before and after them.	
Graphical Organizers *(You are presenting an original visual pictograph, chart, or concept pattern.)* *Describe the visual below and then copy and paste your original graphic.*	
In the graphic organizer, we start out with the basic music theory of "what is a scale". At this stage, music students should be familiar with the sound of a basic major, western diatonic scale. Moving from that step, students were able to identify whole and half steps, and apply that knowledge to their understanding of a western diatonic scale. From there, student learned the 7 main solfège syllables and assigned them to the corresponding major scale notes. The solfège syllables are Do Re Mi Fa Sol La Ti Do. Once the 7 main syllables are mastered, the teacher can introduce the remaining 8 syllables. We ask if the piece is in major or minor so we know what solfège syllables to apply. The remaining solfège syllables are di/ra, ri/me, fi/se, si/le, li/te. After that, students should mark their rehearsal music with solfège to become more comfortable with solfège.	

Copy and paste your original visual pictograph, chart, or concept pattern below. Create using word.


What is a scale
Whole and half steps
7 main Solfège Syllables
Do, re, mi, fa, sol, la, ti, do
Is the piece in major or minor?
Remaining 8 Solfège syllables
Di/ra, ri/me, fi/se, si/le, li/te
Mark music with correct solfège syllables to practice
Become a master solfège sight-singer

Gagne's Nine Events of Instruction

Instruction Event	**Describe how each instructional event will be addressed in your instructional unit. Cite a reference from you text as to why this approach will be effective.**
1. Gain attention	The instructor will have modern worship songs playing when the class walks in, preparing them for their worship-song warm-ups for the class period (Nilson, 142)
2. Inform learners of objectives	During the class period, the instructor will inform students of the goals of the lesson, by building on previous knowledge of the main solfège syllables, and now adding new content of not so common solfège syllables. (Nilson, 144)
3. Stimulate recall of prior learning	During the lesson, the instructor will first have students play a c major scale at a keyboard or piano, then have them audiate the scale in their heads, and then finally sing the scale on solfège out loud.
4. Present the content	During the lesson, the instructor will first have students play a c major scale at a keyboard or piano, then have them audiate the scale in their heads, and then finally sing the scale on solfège out loud. Next, the instructor will show the class where the new solfège syllables sit on a C major scale, on a piano, or on a piano graphic (Nilson, 145)
5. Guide learning	During the class period, the instructor will be walking around the room as students work in pairs to familiarize themselves with the new solfège syllables. As the students are becoming more and more comfortable with them, the instructor will have them pull out repertoire from their choral classes or ensembles and write the solfège syllables in their music. This helps them apply these skills to music outside of class (Regelski, 18)
6. Elicit performance (practice)	Students will be given 10 minutes to work on their own to either practice saying and singing the new solfège syllables on a piano, or to write solfège into their ensemble repertoire. During this time, the instructor will be walking around the room, helping students, answering questions, and checking on their overall understanding. (Nilson, 275)
7. Provide feedback	The goal of each class period is to promote self-regulated learning and self-assessment. To this end, the instructor will generally model and discuss practice strategies, and how to create one's own "cheat sheet" to check that their solfège syllables are correct, and how to check their accuracy. The instructor will take time to answer questions throughout the class period and assign peer feedback and discussion throughout the class period to supplement instructor feedback when appropriate. (Nilson 272, 273)
8. Assess performance	Assessments will be conducted informally as the instructor askes student to each volunteer to sing a portion of their repertoire on solfège for their class partners first, and then for the instructor second, encouraging feedback from peers before they sing for the instructor. (Nilson, 272)

9. Enhance retention and transfer	The instructor will spend the last five minutes of class reviewing the new solfège syllables and lead the class in singing through a chromatic scale on the new solfège. This review will help students recognize the similarities and connections between solfège and intervals, and how it applies to their future repertoire and how they can be prepared to sing something, even when sight-reading. (Regelski, 18) (Nilson, 235)

CURRICULUM PROJECT: IMPLEMENTATION CHART

Part I: Evaluate and revise the analysis, design, and development charts and the learning objectives

For this assignment, identify all items and tasks that must be prepared before you begin teaching your instructional lesson

List at least 6 necessary, physical items and provide a rationale for its use (e.g., flashcards, PowerPoint presentations, handouts, activity sheets, flipcharts, etc.)

Student: Courtney Stinson	**Course for which you are creating curriculum: Sight-Singing with Solfège**
Physical Item	**Rationale for Use** **Cite a reference from your text for each item indicating its effectiveness**
Properly Tuned Piano	**Ensuring a keyboard is available allows the instructor to capitalize upon the listening mode (Nilson 253). Being able to hear and see intervals from a piano helps students create muscle memory in their aural skills.**
Essential Elements for Musicianship Textbook	According to Regelski, "Performance cannot be taught properly in the absence of listening models!" (Regelski, 194). Being able to see common exercises or even warm-ups in written form will help students easily recognize common intervals and commit them to memory.
Common Intervals handout	Preparing an organized outline contributes to an effective class period (Nilson, 144). The outline of common intervals provides the student with identified goals for the class period.
Projector hooked up to classroom computer	Many courses incorporate technology or alter course format to incorporate online learning in order to maximize time and resources (Nilson 47). Although this class meets in person, the use of a projector incorporates a different mode of instruction, switching up the attention span of the students.
Classroom space with a whiteboard, white board markers	**The pacing of a lecture is key to student comprehension (Nilson, 145). When instructors take the time to write things out on the whiteboard, it helps students slow down and not feel overwhelmed, as well as helps the student not feel alone if they are seeing and learning concepts with the instructor.**

Visuals to illustrate intervals Piano keyboard print-out Presentation print-out	**Visual aids are helpful in many forms, and they assist learning for virtually everyone in a learning environment (Nilson, 145). Being able to not only hear intervals on a piano, but to also see them on a keyboard may not help the student if they need to see intervals in terms of notes on a staff, or possibly even steps, such as physical steps.**

Part II: List at least 6 necessary tasks and provide a rationale (e.g., jobs to be done in advance, such as arranging chairs in a specific formation, photocopying, etc.).

Task	Rationale for Task Cite a reference from your text for each task indicating its effectiveness
Prepare opening questions connecting the previous lesson	Asking students to summarize the previous class and asking recall questions can help students prepare to actively engage in the lesson (Nilson, 159). When students are engaged in the lesson, their concept retention is higher.
Prepare outline of class	Preparing an organized outline contributes to an effective class period (Nilson, 144). An outline shows students what they can expect to learn in this class period, as well as provide them space to take notes to take home if they wish. This should be in the form of print-outs for the lesson.
Photocopy common vocal warm-ups	Preparing an organized handout contributes to an effective class period (Nilson, 144). The handout of common intervals provides the student with identified goals for the class period, as well as provides a reference for them to come back to.
Prepare common intervals handout	Preparing an organized handout contributes to an effective class period (Nilson, 144). The handout of common intervals provides the student with identified goals for the class period, as well as provides a reference for them to come back to.
Prepare sightreading example	The incorporation of sightreading examples sets achievable, lesson-specific goals and give students an opportunity to judge whether or not they have achieved these goals (Regelski, 210). Since sight-singing on solfège is the main goal, this also serves as an informal assessment.
Arrange chairs in pairs in the choir classroom	Asking students to pair with a partner can help them identify gaps in their knowledge by filling in notes they may have missed (Nilson, 147). Having students work in groups or pairs changes up who the student receives feedback from.

Part III: Describe in 4–6 sentences 1 type of Formative Assessment that you would choose to implement and detail its effectiveness for your course.

Formative Assessment Type	Assessment Details
Exit ticket	In pairs, have students choose a scale from around the world discussed in a previous "Theory Thursday" lecture, and have them write out the solfège syllables for that cultural scale, in addition to identifying a writing in the intervals of that scale. Team based learning helps students best imitate and prepare for the workplace later in life (Nilson, 189). This exit ticket will help me identify whether or not students are understanding intervals (from previous lessons) as well as main, and secondary solfège syllables. This exit ticket is low-stress, and provides me, the instructor a glimpse of how well students absorbed this class' material.

CURRICULUM PROJECT: EVALUATION CHART

Your Evaluation Plan

In the chart below, describe your plan for a formative assessment for each learning outcome in this unit

(This is something you would do before a summative assessment or exam to gauge the learner's grasp of the learning objective)

Student: Courtney Stinson	**Course for which you are creating curriculum: Sight Singing on Solfège**	
Learning Outcomes	**Your Formative Assessment Plan**	**Rationale for Formative Assessment Type** *(Describe why you believe this assessment is the most effective and cite a reference from your text for support)*
1. List Solfege syllables	Background knowledge probe: Students will write down what solfège syllables they know.	According to Nilson, this is a way to see what students know before starting a new unit or chapter.[101] I think this will be the

[101] Linda B Nilson, *Teaching at Its Best*, 4th ed. (San Francisco: Jossey-Bass, 2016) 277

		best way to see if students 1) even know what solfège is, and 2) I can strengthen what they already know. This will also tell me what theory knowledge may be present
2. Identify intervals in a scale	Muddiest point: Students will write down what they perceived as the muddiest point of the demonstration.	With this formative assessment type students have the direct opportunity to address things they don't know, without risking embarrassment in front of the whole class. The teacher can then address written questions at the end of class. It also helps the teacher see the material presented through the student's eyes to better understand how they are seeing the concept.[102] If students consistently pick the same muddiest point, the teacher should consider re-teaching this concept.
3. Demonstrate knowledge of Solfege and intervals by singing a scale	Recitation: Students will be given the opportunity to sing a scale on solfège	This assessment is very to-the-point. While this assessment is normally graded, the teacher will not be grading it in this setting as they are just checking the recall of the student.[103] For a challenge, or for students ready to be challenged, teacher can ask to hear a minor scale to be sung.
4. Experiment with different sounds, melodic intervals, and foreign concepts of music	Focused Listing: Students will list as many intervallic sounds that they hear in everyday life, as they can. For example, "ding-dong" of a doorbell, or the sound of an ambulance, or a cell phone chime, etc.	According to Nilson, this technique will help students activate their prior knowledge of intervals. This is important in getting students to connect the dots between intervals, and how they are relevant to everyday life, and how we hear them all around us without even realizing it is music.[104] Teacher should encourage students to say the solfège syllables of the intervals

[102] Linda B Nilson, *Teaching at Its Best*, 4th ed. (San Francisco: Jossey-Bass, 2016) 278

[103] Ibid. 247

[104] Ibid. 277

		we hear in everyday life to reinforce their comfort with solfège.
5. Select new repertoire each week with the sole purpose of sight-singing	Recall and Review: Students will be handed a new piece of music and will write in as many solfège syllables as they can in 5 minutes. After 5 minutes, the teacher will go through the music with students calling out the solfège syllables.	This assessment will help students test themselves on what they know, how they understand it, and then give them a chance to correct themselves without being penalized in their grade.[105]

[105] Linda B Nilson, *Teaching at Its Best*, 4th ed. (San Francisco: Jossey-Bass, 2016) 233

Evaluation and Reflection

Consider all of the charts and stages of development in order to create your syllabus. List at least 6 issues or strategies that must be addressed to make your unit stronger and more concise. Provide a rationale for your choice.

Issue/Strategy	**Rationale for Changing**
The course material may not be considered challenging. An unmotivated student will not want to participate.	Some students may fail to see the importance of sight-singing and how it can further their music knowledge. It is up to the teacher to then create experiences in which the student learning serves important needs.[106]
Students may have a fear of not being able to master phrases, songs, or words that are not in English	Many students that I work with complain about singing a song that's not in English (or their spoken language) because they are afraid that when the concert comes, they will be so nervous about the performance, they will either forget the words, or say them wrong. Recitation and review will get students more comfortable with this but will also stress that solfège is so important to learn so that students have a foundation from which to learn their songs, even if they don't know the words or pronunciations.[107]
Students may not understand sight-singing's relevance or importance	In a way, teachers need to sell their material to students sometimes. If students see sight-singing merely as a learning too just for school, they won't be motivated to use it, or understand its importance. The teacher should be able to help the student see real-world practical applications to sight-singing, and how sight-singing can help students get over the initial barrier of "not knowing the song" so that they can spend more time on expression to use this art form for personal pleasure.[108]
While this course is designed for a secondary Christian school, it cannot be assumed that all students will believe that the Bible is the source of truth.	Van Brummelen says, "My starting point is that the Bible is God's inspired Word. Believing the truth of Scripture means not so much believing *that* as it does believing *in"*.[109] It will be vital to promote a Christian worldview, including the Bible as the source of Truth as God's inspired word.
Students might not be open to learning multiple facets of singing, and are simply taking the class for an "easy credit"	"Exposure to uncertainties in our knowledge bases helps students realize that often there is no one superior truth, nor can there be, given the nature of rational knowledge."[110] Uncertainty is a given in knowledge, but being able to identify it as such and to be

[106] Linda B Nilson, *Teaching at Its Best*, 4th ed. (San Francisco: Jossey-Bass, 2016) 97

[107] Ibid. 247

[108] Thomas A Regelski, *Teaching General Music in Grades 4-8* (New York: Oxford University Press, 2004) 190

[109] Harro Van Brummelen, *Steppingstones to Curriculum: A Biblical Path*, 2nd ed. (Colorado Springs: Purposeful Design Publications, 2002), 77.

[110] Nilson, 11

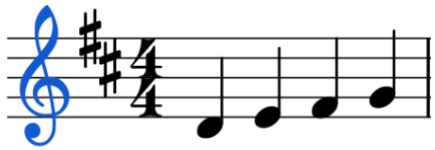
	comfortable with it will lead them out of dualistic thinking and into multiplicity conceptions of knowledge. That there may be more to what they're learning than what they already think and know.
Students might be insecure and won't want to sing in front of other people	A lot of students have test or performance anxiety. Many successful musicians also deal with regular performance anxiety. For this purpose, the teacher can have students say or sing their solfège to just the teacher, but the teacher should also encourage the student to work in small groups, and gradually add members to their groups to help combat anxieties.

SUMMATIVE ASSESSMENT – QUIZ

This quiz will cover on-going theory introduction that aids sight-singing

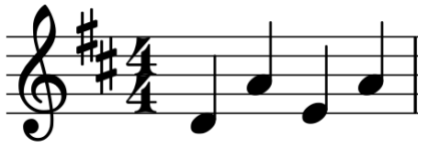
Multiple Choice: Circle the correct answer - 5 pts each

1. What major scale is this the first four notes of?



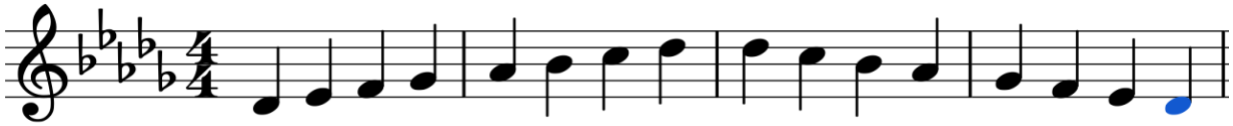
A. B major
B. A major
C. C major
D. D major*

2. What intervals are shown in the example below?



A. Do-sol, Re-sol*
B. Do-mi, Re-mi
C. Fa-do, Sol-do
D. Mi-ti, Fa-ti

3. What scale is this?



A. D major
B. B minor
C. Db major*
D. Bb minor

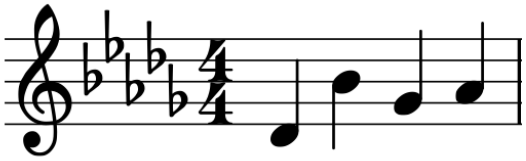
True and False. 2 pts each

4. True or False, the Key of A major has 4 flats.
A. True
B. False*

5. True or False, the Key of F major has 1 flat.
A. True*
B. False

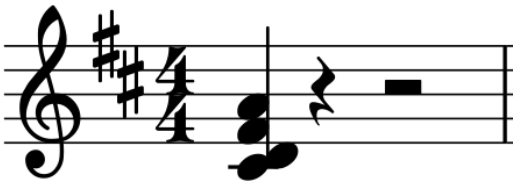
Multiple Choice: Circle the correct answer - 5 pts each

6. What solfège syllables are shown in the example below, in the correct order?



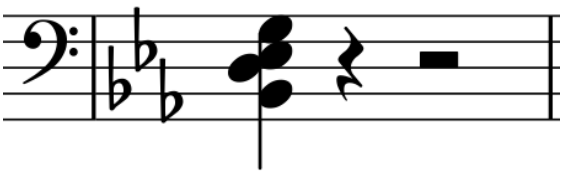
A. Mi, do, la, ti
B. Fa, re, ti, so
C. Sol, do, re, fa
D. Do, la, fa, sol*

7. What major 7th chord is shown in the example below?



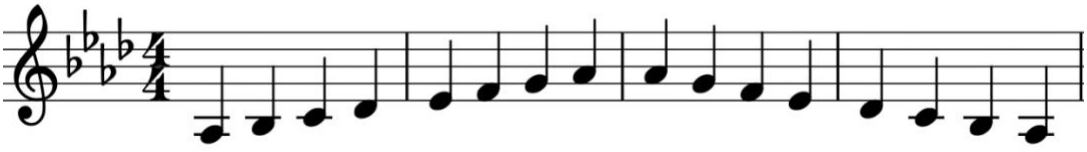
A. C
B. A
C. F#
D. D*

8. What major 7th chord is shown in the example below?



A. Bb
B. G
C. D
D. Eb*

9. What scale is this?



A. A melodic minor
B. Ab major*
C. Bb minor
D. Gb major

10. A C major triad contains what notes?
A. C, Eb, G#
B. C, E, G*
C. C, Eb, G
D. C, E, G#

11. A G major triad contains what notes?
A. G, B, D*
B. G, A, D
C. G, B#, Db
D. G, Bb, D

12. An A major 7th chord has what notes?
A. A, C, E, G#
B. A, C#, E, G#*
C. A, C#, E, G
D. A, C, Eb, G#

13. The key of B major has 5 sharps. What are they, in the correct order?
A. F, C, G, D, A*
B. F, C, G, E, A
C. B, E, A, D, G
D. C, G, E, A, B

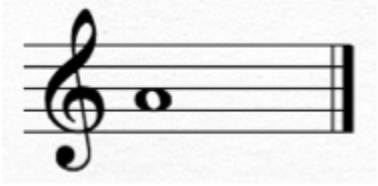
14. What is the correct order of flats?
A. B, A, E, D, C, G, F
B. B, E, A, C, D, F, G
C. A, B, C, D, E, F, G
D. B, E, A, D, G, C, F*

15. What is the correct order of sharps?
A. F, G, C, D, E, A, B
B. F, C, G, D, A, E, B*
C. G, F, D, C, A, E, B
D. G, F, E, D, C, B, A

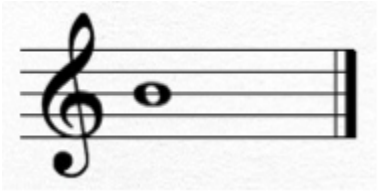
16. A Bb major 7th chord has what notes in it?
A. Bb, D, F, A*
B. Bb, D, F
C. Bb, Eb, Ab, C
D. D, F, A, Bb

17. The key of Ab major has 4 flats. What are they, in the correct order?
A. Bb, Eb, Ab, Db*
B. Eb, Ab, Db, Bb
C. Ab, Bb, Db, Eb
D. Db, Bb, Eb, Ab

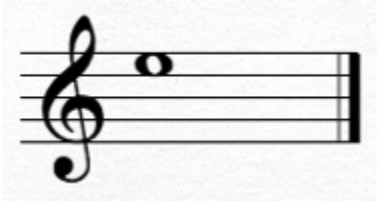
#18-23 Using fixed Do, circle the correct solfège syllable. 2 pts each



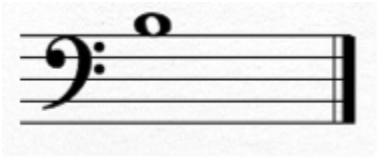
Do
Fa
La*
Sol



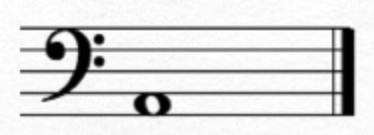
Ti*
Re
Do
Fa



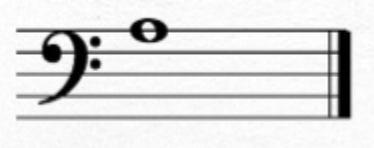
Do
Fa
Mi*
Re



Ti*
Re
Do
Mi



Fa
La*
Mi
Sol



Sol
Do
Fa
La*

#24-25 Fill in the blank. 2 pts each

24. Legato singing means to sing the music _____. ***Smoothly Connected**

25. In 4/4 time, a dotted half note receives _____ beat(s). ***3**

FORMATIVE ASSESSMENT – QUIZ

Short Answer: 5 pts each

1. What are the solfège syllables for a major scale?
   Do re mi fa sol la ti do
2. What are the solfège syllables for a natural minor scale?
   Do re me fa sol le te do
3. What are the solfège syllables for a melodic minor scale?
   Do re me fa sol la ti do te le sol la me re do
4. What are the secondary solfège syllables?
   Di, ra, ri, me, fi, se, si, le, li, te
5. What is fixed-Do?
   Fixed Do is where C is always do. If you're in the key of D for example, the major-scale solfège will be Re, mi, fi, sol, la, ti, di, re.

True or False: 5 pts each

6. Singing on solfège helps you sight-sing better. **True**
7. Solfège is irrelevant to singing. **False**
8. Practicing sight-singing on solfège will make you stronger in singing. **True**
9. Solfège is only used in the English language. **False**
10. Solfège can only be used for fixed-Do. **False**

References

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THESIS COMPLETION FORM

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Master of Arts in Music Education

Thesis: THE IMPORTANCE OF SIGHT-SINGING TO EAR-TRAINING AND MUSICIANSHIP OF NEURODIVERSE STUDENTS

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