

**THE EFFECTS OF USING FAMILIAR MELODIES IN  
MELODIC INTERVAL IDENTIFICATION IN  
UNDERGRADUATE MUSIC MAJORS**

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**CULTURAL CENTER  
UNIVERSITY OF MALAYA  
KUALA LUMPUR**

**2015**

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**DISSERTATION SUBMITTED IN PARTIAL  
FULFILMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF MASTER OF ARTS (PERFORMING ARTS)**

**CULTURAL CENTER  
UNIVERSITY OF MALAYA  
KUALA LUMPUR**

**2015**

**UNIVERSITY OF MALAYA**  
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## ABSTRACT

Melodic dictation is an important part of most university-level aural skills curriculum. This skill is well esteemed for its ability to facilitate students translate the pitches and rhythms that they hear and visualize them on manuscript. Studies attempting to discover trends in strategy usage of successful dictation takers, however, have not yielded meaningful results. This study attempts to discover whether the use of familiar melodies in interval identification is effective for undergraduate music majors.

Control and experimental groups consisted of 60 random samples in each group. Control group will receive no melodic reference to identify intervals, while the treatment group will be trained to identify intervals using familiar melodies. Both groups will then be assessed with 12 intervals using pencil and manuscript with melody being played on a piano. The identified and dictated answers in the span of the experiment serve as test results and data analysis to determine the effectiveness of using familiar melodies in interval identification.

Keywords: familiar melodies, interval identification, aural pedagogy

## ABSTRAK

‘Melodic Dictation’ adalah satu bahagian penting dalam kemahiran aural di kebanyakan peringkat universiti. Kemahiran ini dilihat sebagai salah satu keupayaan yang memudahkan pelajar menggambarkan melodi dan rentak yang didengar dan menterjemahkan ke atas kertas muzik manuskrip. Bagaimanapun, kajian-kajian yang telah dibuat untuk menemui trend dalam penggunaan strategi ‘melodic dictation’ gagal membuahkan hasil yang bermakna. Kajian ini bertujuan untuk mengetahui keberkesanan penggunaan melodi-melodi yang dikenali (familiar melodies) untuk mengenalpasti pengenalan jeda dalam jurusan muzik sarjana muda.

Kumpulan kawalan dan eksperimen akan terdiri daripada 60 sampel rawak dalam setiap kumpulan. Kumpulan kawalan tidak akan menerima rujukan melodi untuk mengenal pasti jeda, manakala kumpulan eksperimen akan dilatih untuk mengenal pasti jeda menggunakan melodi-melodi yang dikenali. Kedua-dua kumpulan akan dinilai dengan 12 soalan menggunakan pensil dan manuskrip. Jeda-jeda akan dimainkan menggunakan piano. Manuskrip yang diterima akan dianalisis untuk menentukan keberkesanan menggunakan melodi-melodi yang dikenali dalam pengenalan jeda.

## ACKNOWLEDGEMENTS

There is no amount of thank you that can be said to the people who were directly involved in this journey. Heartfelt gratitude and deepest appreciation to:

1. **My family and friends** for their continuous support throughout the many years of my studies in this program. I would not have completed this paper without their persistence to keep on pushing me towards this achievement.
2. **My supervisor** Dr. Pan Kok Chang, for his endless guidance, patience and mentoring, for me to complete this final hurdle.
3. **My colleagues at work** for their understanding; that I had to juggle between meeting deadlines at work as well deadlines in my course assignments and dissertation.
4. **Participants of this study** whom without their cooperation and patience; this would not have been possible.
5. **My fellow course mates** for their help in all aspects of this paper be it referencing, proofreading or just being there to cheer me on when I felt like giving up.

THANK YOU

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## CHAPTER 1: INTRODUCTION

Music has many facets and spectrums. It overlaps with many other fields such as sociology, psychology, education, anthropology, biology, philosophy and physics (Hodges, 2011). Music education is a powerful tool for nurturing children's social, intellectual and creative potential. It trains children to focus for longer periods of time, accelerates the development of reading and speaking skills, and helps children gain a sense of compassion for others. This is continuing to be proven by a wide breadth of research over the last ten to twenty years in the related fields of composition, instrumental and vocal studies in higher education. (Schmidt, 1992; Kennell, 2002; Burwell, 2006; Barrett & Gromko, 2007; Gaunt, 2009). Music study requires great accuracy in auditory processing. This means children who are musically trained have better abilities to differentiate slight details of speech. This leads to improved reading, better understanding, and also a higher aptitude to deduce what both adults and children are really saying (Sheldon, 1998).

Music education is an integral part of learning and is implemented in many curriculums around the world. Children who are musically trained are able to develop to their full capabilities because participating in musical activities is extremely rewarding, with children more likely to spend the time on practice to develop higher thinking and social abilities. The most important is that music is an outlet to express one's self, to let creative juices flow freely, and to be inspired by their own endless volume for personal growth (McPherson, 2006). However, music educators have faced challenges in effective implementation and application of the standards stipulated by the Music Educators National Conference in 1994 into classroom instructions and curriculums. According to the American National Standards of Music Education (NAME), music educators are to abide by the nine standards in their teaching and

learning philosophies to ensure good music education practices. The nine standards are:

1. Singing, alone and with others, a varied repertoire of music.
2. Performing on instruments, alone and with others, a varied repertoire of music.
3. Improvising melodies, variations, and accompaniments.
4. Composing and arranging music within specified guidelines.
5. Reading and notating music.
6. Listening to, analyzing, and describing music.
7. Evaluating music and music performances.
8. Understanding relationships between music, the other arts, and disciplines outside the arts.
9. Understanding music in relation to history and culture.

These standards were adopted from the National Content Standards for Music Education (Whitman, 2001). The first, fifth and sixth National Content Standards (MENC, 1994) are directly related to this study as they share a common foundation; music intervals. The ability to sing, read, notate and identify intervals is crucial to develop basic musical skills in the classroom. This basic musical skill should be established at the early stages of music learning in order to have a steady and effective progression, thus fulfilling the requirements of the National Content Standards.

Anyone who wants to be in the music field, whether as a conductor, performer, composer or educator, the ability to listen is a skill that is sought after, and a common activity that is used to develop such skill is through dictation. Dictation is a process where one tries to notate the music that is heard as accurately as possible. Dictation includes various elements like rhythmic, harmonic and melodic (Clements, 2003). In order to be effective and accurate in melodic dictation, one must be secure in

identifying the intervals that are organized in succession that makes a melody. This study focused on the accuracy of interval identification by using familiar melodies as a reference.

### **1.1 Purpose of Study**

A majority of aural skills courses in higher learning are dedicated to melodic dictation, in which this study focused on. Melodic dictation is one of the core requirements in aural skills courses (Clements, 2003). However, based on observation and experience, not many are able to notate melodies accurately. In fact, melodic dictation is thought to be one of the most difficult components of aural skills courses. Traditional methods to teach melodic dictation are done by repetitive drills, and this method is yet to be proven that it works across all music students.

The objective of this study was to find out the usefulness of using the first two pitches of familiar melodies to identify all melodic intervals within an octave. It investigated the accuracy of the results of participants – separated in two different experiment groups – by using this method. There was also a comparison of results of the two experiment groups; the controlled group whose interval identification method was just by using recognized pitches through sound, while the treatment group whose interval identification method used the aid of familiar melodies. Further explanation of the group demographics and methodology of this study can be found in Chapter 3 of this paper. Reaching the objectives of this study will solidify the method of using familiar melodies to recognize melodic intervals, and in the long term, aid in dictating melodies.

## **1.2 Need for the Study**

The two main aural pedagogy methods in Malaysia are YAMAHA Music Courses and more recently, Kodaly. The main differences between these two methods are in its rote learning and solfège hand signs to recognize pitch respectively (Kendall, 1988; Kuehne, 2010). Hence, children who have gone through many years of training based on either these methods have no difficulties in identifying intervals and dictating melodies as they have been trained to relate a pitch to a syllable, making interval identification easier. However, for those who did neither method in their musical training years, there seems to be a large gap in the accuracy level of interval identification. This was observed particularly in undergraduate music majors of this study. Therefore, this study will examine the effects of using familiar melodies in aural pedagogy, particularly in interval identification, in undergraduate music majors.

A melody is made up of a sequence of single notes. These sequence of single notes are in any direction, whether ascending or descending, giving it distance between each other. This distance between each note is known as intervals. This organized sequence is the foundation of a melody (Grove, 2015). Based on personal observation of aural classes, undergraduate music majors, particularly those who have never undergone proper aural training were unable to identify the contours of melodies played. Although melodies have been broken down into 4-measures, these undergraduates find it difficult to dictate a melody as accurately as possible. The purpose of this study was to investigate the problem faced with participants who lack interval identification skills, hence failing to successfully dictate simple melodic phrases.

### **1.3 Limitations**

Although many researches relating to aural pedagogy such as sight-singing (Cassidy, 1993; Sheldon, 1998; Kuehne, 2010; Hung, 2012), aural perception (Ritchie, 1960; Sherman, 1970; Grutzmacher, 1987; Whitman, 2001), play-by-ear (Delzell, Rohwer & Ballard, 1999; Musco, 2010; Baker 2013) and pitch recognition (Hedger, Heald & Nusbaum, 2013) have been conducted, little has been published on the effectiveness of using familiar melodies as one of the tools for interval identification. Also, many relevant literatures were very backdated, some as far as fifty years ago (Hindemith, 1949; Hartshorn, 1958; Chittum, 1967; Hadow, 1968; Heffernan, 1968; Jeffries, 1970). One of the factors is the lack of relevant research literature that is up-to-date (as cited in Madsen, 1988; Yarborough, 1996; Kennell, 2002).

The limitations to the study were also due to the limited number of participants during which this study was conducted. Results would have a larger difference and significance if it were a larger group. A larger group would have also given a longer period of time to conduct the treatment would have also been a factor because aural training is a skill that is developed over time and many repetitions to ensure the particular skill is well developed. The results of this study are valid to only the simplest form of melody dictation, which is identifying intervals. Hence, this only represents a fraction of a more detailed analysis on melodic dictation.

### **1.4 Definition of Terms**

The following terms used in this study requires definition:

1. Familiar melodies: Well-known melodies of various genres will be used as examples for both ascending and descending of each interval up to a perfect octave.



The intervals referenced are the first two notes at any point of the melody, whether at the introduction, chorus or ending.

2. Melodic intervals: Interval exercises and questions that were conducted in this study were done in a melodic motion. Music intervals also come in harmonic motion, which was not included in this study.

3. Dictation: Of the three identified dictation skills that are necessary in the development of aural skills, the term ‘dictation’ used in this study refers to melodic dictation (pitch only) unless stated otherwise (the other two being rhythmic dictation and harmonic dictation).

### **1.5 Research Questions**

Questions addressed in this study include:

1. Will there be a difference in the participants’ response towards interval identification as a result of using familiar melodies to identify intervals?

2. How accurate will the identification of intervals be as a result of using familiar melodies to identify intervals?

3. Will participants of the treatment group differ significantly in the results from the control group after experiencing the use of familiar melodies to identify intervals in facilitating dictation?

### **1.6 Hypotheses**

A p-level of 0.05 was adopted in this study for the rejection of null hypotheses.

The following null hypotheses were formulated for this study:

H<sub>0</sub>#1: There will be a slight difference in the participants' response towards interval identification as a result of using familiar melodies to identify intervals.

H<sub>0</sub>#2: There will be improvement in accuracy of interval identification as a result of using familiar melodies.

H<sub>0</sub>#3: There will be a small significance in the results between the control group and the treatment group after the latter experiences the use of familiar melodies to identify intervals.

## CHAPTER 2: LITERATURE REVIEW

### 2.1 Aural Skills

There are nine outcomes of the National Standards of Music Educators (Music Educators National Conference, 1994). Participants are required to acquire a certain level of aural skill in seven of those to achieve the standards successfully. Covington (1992) identified the following seven aural skills that are needed by musicians:

1. Awareness of musical structure
2. Awareness to intonation
3. Awareness of necessary performance adjustments in small and large ensembles
4. Awareness of nuances in performance
5. Ability to internally visualize music
6. Ability to represent heard or internalized sounds in notation, and recreate those sounds in performance
7. Ability to sight-read in several clefs

However, there are various problems linked with the aural training of musicians of the younger generation. Firstly, there are many negative thoughts of ear training. The idea of failing is not accepted and it creates a negative effect on a performance. This observation is beginning to be more apparent in Generation-Y where there are two contrasting ends of the stick; 1) pressure from family and society to do well in life therefore failure is unacceptable, and 2) the contentment of being mediocre and just get by, so the hunger to succeed and be the best that they can seem to be elusive.

Secondly, some participants find ear training to be a waste of time. They do not see the advantages of good aural and reading skills. This is also observed in students who have generally good ears but lack the drive to do better because of the mentality that they are able to do aural and sight singing without the need to practice. Finally, consistent and clear methods of teaching aural skills seem lacking (Kendall, 1998; Harrison, Asmus, Serpe, 1994) as there are no fixed methods to teach aural skills, particularly to students at tertiary education. Based on observation in other aural classes in both Foundation and degree level, different teachers have different methods and approaches in the teaching and learning of aural courses. While this is to be expected based on each individual teacher's background and training, this resulted in inconsistency in each graduating batch where some had it tougher than others because of the different expectation levels from different teachers.

There have been researches conducted on the topic of aural skills on its contributing factors and methods of acquiring these skills among musicians. These have been successfully identified, such as the methodologies of Hungarian composer, musicologist, educator and philosopher Zoltan Kodaly (1882-1967). Kodaly's method is widely used in elementary music education in the United States of America, and was later adopted in the music education system in Malaysia by the Yamaha Music School. Although Kodaly's methods are widely used and accepted amongst the music teachers of a beginner level, it has yet to find a place where the methods are accepted in a more advanced curriculum (Giles, 1991; Houlahan & Tacka. 1990).

There are two models that music schools in higher education adopt their course structure for aural skills. First is to merge the aural class with music theory into an inclusive course; second, it can be taught separately to focus on each skill within the course (including dictation and sight-singing). In the United States, 60% of the 306

music schools in the United States taught aural skills independently from music theory, while 39% combined the two subjects. The other 1% did not teach aural skills in the curriculum (Pembroke and Riggins, 1990). The results show that music schools in higher education place high regard to the development of aural skills. There were no resources found for such course structure in a Malaysian context. However, it is evident that the structures of aural training found in the Associate Board of Royal School of Music (ABRSM) and Trinity syllabi are separately taught skills.

Musicians learn to identify pitches, intervals, melody and other basic elements of music by hearing. This skill is applied to dictating in spoken or written language. Ear training is a component of formal musical training, and the process is equally important as sight singing. Sight singing corresponds to reading a piece of music and then singing it without having any opportunity to see the material beforehand. The ideal nature of studying aural skills is to map out the sounds to the symbol. This means being able to match the pitch to the notes. Musicians should be able to read music instantly, knowing the sound of the notes even before they play it. Aural training enables musicians to listen to an unfamiliar piece, remember it and being able to transcribe it again. Ear training is proven to be a crucial skill in improvisation as well. For some participants in the contemporary music program, improvisation is part of a required skill in the learning outcome of courses such as Improvisation Skills and instrumental performances. During improvisation, all aspects and elements of composition are on the spot, leaving little or no time to analyze or study a score. One must have the ability to listen and move with the harmonic changes naturally (Dobbins, 1980).

Generally, participants are evaluated on their dictation and sight-singing skills. These are the two main activities in the development of aural skills (Paney, 2007). This

is found in a survey when respondents were asked to identify the areas of aural skills training that made up the majority of their curriculum (Pembroke and Riggins, 1990). Aural training develops an understanding of tonality, harmony, phrase and melody. Based on this literature, it is clear that by having both dictation and sight-singing skills, musicians will be able to develop and enhance their aural skills training. This is clearly lacking in today's musicians where they do see the importance of aural skills and only focuses on to be a better performer without realizing that aural is one of the important skills to be a wholesome musician.

The reality of today is that students are unaware that having good aural skills means they have the skills to dictate and transcribe. This will widen their career options of being a music copyist or transcribe tunes that they will need to perform at functions and gigs. Many studies have proven that having good listening skills can aid in sight singing as well as dictation. The ability to recognize a group of notes, how it looks like when notated, and remembering their sound to produce it on paper is a developed sequence of dictation (Myers, 1961). Dictation and music reading only mean something when music is experienced through listening. Notes and symbols make more sense when the learner is able to see the notes and symbols and hear it in their mind with long experiences in aural training (Hartshorn, 1958). The combined effort of the ear, eye and mind are skills to recall the sounds that are represented by symbols and notes. This comes with a well-trained ear with the ability to interpret both silently and by singing (Walton, 1966).

A good ear means having an accurate perception of pitch and rhythm. The questions of musicality as part of a neurological skill are rather unclear. Most of us can hope that there may be some harmony – or alignment – between our desires, powers and opportunities but there will always be some whose abilities do not match their desires,

and those who have every talent except the most important one: judgment or taste. No one has all the talents, cognitively or emotionally (Green, 2003). So, while many musicians improve on their aural skills through training and practice, there are only a handful that are gifted who are able to listen to pitch and rhythm perfectly without having to go through years of music training.

Early music training can develop absolute pitch. However, the training itself cannot guarantee of having it thereafter. People with absolute pitch can immediately tell the pitch of any note, without comparison or reference to an external standard. They can do this not only with any note they hear, but with any note they imagine or hear in their heads. While absolute pitch may sound like an added sense as it allows one to instantly sing or notate any music at its correct pitch, it may cause problems too. Transposing instruments or the tuning of an instrument would be annoying if not done in the correct pitch (Levitin & Rogers, 2005; Hedger, 2013). For this research, participants with absolute pitch will be at an advantage. However, the focus is not the type of solfège system used, but the effectiveness of using familiar melodies in the accuracy of melodic dictation.

Absolute pitch is of special interest because it exemplifies a new realm of perception, which many cannot imagine because it is an isolated ability with little inherent connection to musicality or anything else. Absolute pitch is more common in those who have had musical training from an early age. However, many gifted musicians fail to develop absolute pitch despite intensive early training. Absolute pitch is not just a matter of pitch perception. People with absolute pitch must be able to perceive precise pitch differences and label them with notes or names of a musical scale. The focus of this research is to associate solfège with the pitches that

participants hear and the ability to dictate it accurately. It does not require absolute pitch (Levitin & Rogers, 2005; Hedger, 2013).

## 2.2 Solfège

One of the methods of music education used to teach sight singing and pitch recognition is solfège. The term solfège came about in the eleventh century; originated from the work of Italian music theorist Guido D' Arezzo, who coined the initial syllables where each phrase from a hymn begins one note higher than the note before, creating the sound of a hexachord using the syllables *Ut, Re, Mi, Fa, Sol, and La*. The seventh note, *Si*, was created, thus completing the octave. Solfège is widely used in aural pedagogy approaches by Zoltan Kodály (moveable-Do) and Emile Jacques-Dalcroze (fixed-Do). The purposes of these solfège systems are to ease the singing of the syllables, help in memorization and gives indications to tonal functions (Holmes, 2009).

It is taught from a young age to professional tertiary music education, and enables musicians to hear the pitches of a piece of music in their head when they are reading the music for the first time. It also improves pitch recognition of music intervals and enhances the understanding of music theory (Langley, 1963). There have been debates if the solfège system is the most effective method. However, most music educators in general agree that the solfège system are mere symbols, and whichever that is understood is any substantial growth of musicality (Mursell, 1958). The methods of learning solfège is by assigning notes of a scale to a syllable, and then practice them by singing in different sequences. These sequences can gradually be more challenging by using various intervals and rhythms. In such instances, two systems are normally used; fixed-Do and moveable-Do. Various studies have been made of the effectiveness of each system with varying results, as discussed further in this chapter. Although as



such, it is still an individual preference of which system to use as each has its pros and cons (Thompson, 2003).

The movable-Do system is in tune to our psychological experience of normal melodies. Although there are arguments that movable-Do is a system is easily adaptable as it uses the relative key, it is too flexible for musicians to understand and identify pitches. The perception of movable-Do is that the notes have the same relationship to one another and even if it was a tone lower, it is perceived as the same song. However, the fixed-Do system is concrete where each syllable is always tied to a specific pitch. It is used in well-known music schools like Julliard and many other conservatories in Europe (Hindemith, 1949; Levine, 2014)

Although there have been long-term debates of which solfège system is a better one to use when teaching aural, it is without doubt that giving syllables to each pitch aids in sight-singing and pitch identification. Both systems were used in this study as participants were grouped at random thus, have different music backgrounds. Some participants have yet to learn the concept of singing on scale degrees, while translating those scale degrees into solfège syllables to use the movable-Do system. However, a different approach is found in the use of the fixed-Do system. Unlike moveable-Do, which has a steady learning curve, fixed-Do, are just ‘assigning’ letter names to each note on a scale. There is no need to learn the theory of different keys and tonal relationship as each syllable has its own solfège name. Fixed-Do helps to reinforce the relationships between pitches in the context of a certain key (Hindemith, 1949; Levine, 2014).

Fixed-Do can be used to help teach transposition on sight and clef-reading. This can't be done with moveable systems since the syllables are the same regardless of the key or clef. The discussion of these solfège systems found no significant difference at

high school level (Henry and Demorest, 1994). However, higher scores were significant in a study on non-music majors at college level, where participants who used solfège were more accurate than those who used generic syllables (Cassidy, 1993).

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Fixed-Do is viable even as you continue on into atonal/barely tonal sight singing. Moveable systems lose their usefulness once the music is not solidly tonal. Although most ear-training curriculum do not get into atonal melodies, but they certainly deal with modulations. It is easier for the student to continue using the same syllables throughout the passage, and again (this is similar to earlier pros), it will help the student relate the new key to the old key by forcing them to be aware of the names of the pitches. Fixed-do solfège adapts to any kind of music, tonal or otherwise. Movable-do is beneficial for musicians who work within tonal boundaries only. Once chromaticism or modulations are involved, it makes identification and dictation more complicated. There is a lack of study to compare the various solfège systems that are used for effective learning of pitch (Casarow, 2002).

Solfège syllables are ideal for vocalizing compared to letters as it facilitates expressive melodic contours of instrumental melodies. It also aids in correlating notation with technical execution (e.g., the low string on a violin is always “sol”), and help with memorization due to the fact that note names and their technical requirements remain consistent. (Klickstein, 2009)

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### **2.3 Melodic Dictation**

There are three identified dictation components, which are necessary in the development of aural skills, namely melodic, harmonic and rhythmic dictation. There

are four phases in notating dictation namely hearing, memory, understanding and notation (Karpinski, 2000). Melodic dictation means notating a melodic excerpt that is presented either vocally, on an instrument or via a recording. The melody is usually performed a few times, (usually 4-6) and participants are required to notate as much as possible with accurate pitch and rhythm. In contrast, sight singing is notation translated to sound, whereas in melodic dictation, sound is translated to notation. The term 'dictation' used in this study refers to melodic dictation unless stated otherwise. (Powell, 2013)

The development of aural skills is one of the domains of music learning. A variety of music education syllabi that are still used up till today – Dalcroze, Kodaly, Orff, Suzuki – whom separately focus on different aspects in music education. Although there have been extensive studies done in the area of aural perception, aural methods and aural skills itself have linked the effects of using well-known melodies in the enhancement of melodic dictation abilities. Hence, it is my interest to dive deeper into these areas and find the factors and anecdotes to some of the problems that music majors are generally facing.

Aural training, sometimes known as ear training, is a skill by which musicians learn to identify basic elements of music such as intervals, pitches, melody, chords and rhythm. It may be compared with sight singing, which is the equivalent to reading aloud in language. The application of this skill is similar to taking dictation in spoken and written language. Aural training is typically a component of formal musical training.

Melodic dictation, sometimes also called transcription, involves the skill to hear a piece of music and play it back or write down the notes of the melody. Melodic dictation is closely tied to visualization, and is a skill that most experienced

improvisers and composers have developed to a high degree. Therefore the main goal of this study is to strengthen the power of visualization and being able to hear a phrase and visualize how it will look and feel when played on your instrument as accurately as possible. The approaches to tasks in melodic dictation and probable effective strategies for students to develop their aural skills include interval perception (Killam, Lorton & Schubert, 1975), widened listening experience (Karpinski, 2000), and changes of tonal patterns in melodic contours that may affect students' melodic memory (Hoppe, 1991).

The overview of skills that are needed in the practice of aural skills training has been noted in a few researches. Melodic dictation in aural skills training is to train a listener to be able to hear sounds as patterns through an understanding of what is heard in systematic, structural points (Sisley, 2008, pg. 34). Dictation is not the end product of aural skills training. It is a learning process where participants learn to understand music that is presented aurally and to transfer that understanding into applicable knowledge. (Pembroke, 1986, pg. 239)

Aural skills aims to produce a performer or listener who can recognize sound in meaningful music patterns. This means developing a hearing mind and a thinking ear. The two main activities, which this can be achieved, are through performing and listening. Performing includes conducting, prepared repertoire, sight-reading and improvisation. Listening includes identification of musical elements (melody, rhythm, harmony, form and texture), dictation and ensemble skills. Memory skill is essential in the development of good aural skills (Pembroke, 1987). A musical excerpt can be remembered correctly, but the concept may not be fully understood. This means one may have the exact rhythm memorized but cannot visualize it to put on paper. This is also possible when certain theory knowledge is lacking. For example, if one does not

understand grouping of notes in simple time, then identification and notation will be a problem.

The specific processes involved in dictation call for research and should be of interest to any person in the music and music education fields. The learning and practice of the process of dictation leads to a keen listening sense and high level of understanding in music. However, this can prove to be challenging, as dictation is comprehensive and requires multiple listening skills and clear understanding of the methods to integrate and support each skill to create a cohesive listening experience (Klonoski, 2006, p.55)

The current issues faced with dictation abilities in undergraduates are hearing, remembering, understanding and notating. Some participants have difficulties visualizing the pitch or notes they hear. Their ability to transfer the aural information to visual has also been poor. Although it is rare for a student at the undergraduate level to have hearing disability – whether neurological or physical – which they are not aware, but there are on occasions that this goes unnoticed. The basic skills of notation are usually taught in music theory classes. Memory and understanding of the notation skills are usually kept for classes of aural skills. In literature, problems are found in the hearing and memory of aural skills, amongst them being a medical issue or lack of attention or focus in dictation. (Paney, 2007; Sisley, 2008)

Some participants have difficulty remembering the excerpt they hear. Most of the time, they do not remember it correctly. Although they have gone through the training of singing or playing back the melody by ear, some still seem to struggle with this skill. There are many factors to this reason, one of which is the inability to visualize the pitch that they hear. Therefore, the aim of this research is to use well-known melodies that they may have heard from commercials or remember as a kid. This will

instigate the memory to be able to recall the melody accurately and focus on putting it down on paper.

One of the methods in ensuring participants remembers the melody they need to dictate is to play tonal patterns. Participants begin their aural skills development by learning diatonic intervals as conducted in this research. Therefore, administering tonal patterns to participants will facilitate in retrieving the information when working on a dictation exercise (Sisley, 2008).

Participants have problems understanding the concept of aural. Many participants go through the practice of memorizing information, naturally do not understand the concepts. The concept of aural skills is being able to associate the pitch as heard, and putting it down on manuscript. This can only be successfully done through thorough disciplined and dedicated practice. The idea of using well-known melodies for melodic dictation is for participants to focus on the pitch as they would have heard the melody and they would have already memorized it, and put it on paper.

The proposed method to assess dictation is to make participants sing back the pitch they hear. This enables them to recall the melody, thus making dictation easier. If participants are not allowed to sing the pitches that they hear, then they do not have a chance to internalize the pitches. Participants who are able to internalize the pitches are able to notate better as oppose to participants who do not have this skill (Sisley, 2008).

Strategies and methods for completing melodic dictation exercises usually happen during aural skills class. Participants are assumed to be able to accurately dictate a basic melody after completing the standard 4-long semesters of aural skills curriculum at tertiary level. This is proven inaccurate as college juniors performed significantly under par in melodic dictation as compared to sight-singing or error detection (Larson,

1977). Hence, the need to find a solution to enhance the accuracy of melodic dictation is evident in this study.

There have been many studies conducted to investigate the methods of dictation. These studies can be summarized into two categories, 1) investigations on successful methods using open-ended observation and 2) investigations on successful methods through experimental means (i.e., facilitating methods to participants).

Reading music is ever elusive, yet one of the key skills in dictation. Reading music is the ability to recognize pitches and rhythms on paper, transferable via aural and listening skills. One of the many concerns still found in music teaching is the emphasis of music reading and also its effectiveness with methods, which are still by trial-and-error (Hermann, 1965). A study on children in the first-six grades showed that the reasons that participants need to learn how to read and the effectiveness of sufficient methods are still uncertain. This is due to the lack of understanding the nature of the reading process itself (Petzold, 1959). The teaching of reading music is vital to the development of a music curriculum. Emphasis on music reading will stabilize the logical progression of participants and objective evaluation follows through. Active participation in the classrooms must also be encouraged to renew the interest of reading music. Integrating these two reasons will solidify the methods of the ability to translate notation into sound (Heffernan, 1968). Although many studies have argued on the importance of reading music, it all comes down to the ability to understand the notation that is read. Notes on paper can only have meaning when participants have learned to use their listening skills and gain the ability to identify and differentiate movement of tonal and rhythmic patterns (Leonhard and House, 1959).

There are slight comparisons seen in various studies regarding dictation. This skill of translating sound (pitches) into symbols (notation) slightly differs. While it is stated

that the relationship between visual and auditory needs a clearer establishment (Petzold, 1959), aural presentation (listening) with aural response seems to be the most effective dictation method (Chittum, 1967). The United States of America and England lauds the dictation techniques in educational methods (Joseph, 1965; Hadow, 1968). However, contradictions arise when music educators over-emphasize this skill and fail to relate the process of aural skills to music reading. An excellent musician does not mean having exceptional ability to dictate music. However, it cannot be denied that dictation is a necessary skill to develop the ability to notate and read music. The general developments of dictation abilities are monitored by combining the skills with other musical activities (Hindemith, 1949).

#### **2.4 Intervals and Familiar melodies**

In recent years, familiar music has emerged as a dynamic domain of music study and is finding an increasingly comfortable place in schools and universities around the world. In the context of the music education system in Malaysia, a big majority of musicians are classically trained, and it is assumed that musicians would be able to recall well-known melodies, whether classical or pop tune, which would appear in their everyday life. Music educators at primary (elementary) level seem to have fewer methodological and philosophical problems than secondary music educators with the use of familiar music in the classroom. This may be because music teachers in primary schools rely on folk music and tradition nursery rhymes that children are more familiar with (Campbell, 1998; Marsh, 1999). As more music artists begin to crossover and commercialize classical music, it seems that there is little left to the imagination as to where the boundaries are for a particular musical style or genre. Hence, it is a larger goal to diversify and vitalize music education in public schools. Well-known melodies can point the way to new methods of teaching and learning music of any kind. We



maintain that music education is a site of continual development, and that this is partly sustained in our context by reactions to the shifting nature of well-known melodies; the influence of using well-known melodies music education is seen as both an initial drive for rethinking processes of teaching and learning, and an ongoing means by which music education evolves (Dunbar-Hall & Wemyss, 2000).

In recent years, the appreciation for music has been different. However, well-known melodies from nursery rhymes, famous classical melodies or even evergreen pop songs are still going strong on the radio and in the minds of many generations. It is possible that the number of times these melodies have been repeated on air – whether radio or television commercials – that it unconsciously registers into the mind of the listeners. A catchy tune can become an earworm that gets one humming the tune the whole day (Mohd. Shah, 2006).

In this instance, the use of well-known melodies becomes not only a source of observation of a range of teaching and learning strategies markedly different from those of participants' own classroom and private studio experiences, but can be shown to have a beneficial effect on the ways pre-service music educators construct individual approaches to music teaching and learning. Participants noted, for example, that these contexts relied much more on their unconscious memory, and in situations where learning took place without any one member of a group assuming the role of teacher were often described; and rehearsals, which took place without any notation, were commented on. All of these strategies were identified as suitable for adaptation and application to school music education, as well as to other settings in which participants intended to work. All these lifelong learning experiences are what constitutes and reaffirms the stance that well-known melodies is indeed a boon in music education.

‘Music is a significant part of the cultural heritage of every nation and race... For this reason alone, its place is justified in the school curriculum’ (NSW Department of Education, 1963, p.9). Although this can be said for the syllabi for the Malaysian Education System in the primary schools level, little can be agreed upon for the secondary school levels. As the education level goes higher, there is very little emphasis placed on the arts and other extra curricular activities. Participants are much more streamlined into the sciences and bury themselves in books, cramming for the major examinations. The lucky ones still get to continue on with their music lessons externally but not much can be said for those who do not get to experience such luxury. Even though these teenagers would remember these well-known melodies from their childhood or unconscious mind, it is not followed up in their education simply because there is little music education at their level to begin with. This is a sad and unfortunate phenomenon that raises many questions on the level of our education system in general (Mohd. Shah, 2006).

Participants relate better to the song that is familiar to them. Well-known melodies provides music educators with alternative ways of interpreting topics set for study, thus allowing participants access to increased perceptions of music, its materials, processes and construction, and ways it is used in different cultural and geographic contexts. The proximity of participants to the locations of well-known melodies production is another factor contributing to increased awareness of music, and one that can be used in the training of music educators.

The influence of using familiar melodies in music education is wide and it is wise to focus on one area of music instead of many different areas. There have been debates about the nature of music teaching and learning with the acceptance of various teaching approaches of experience and observation. The teaching of familiar melodies

in classroom practice is symbolic between its nature and music education. From this perspective, the use of familiar melodies has raised questions of the correct pedagogical approach and the methods that it is being imparted; thus making music educators re-think the approach, method and the means through which it can be studied. Through the acceptance of familiar music as a form of pedagogical approach, advancement in music education can be made in a time where the philosophies of music education continue to change (Dunbar-Hall, 2000). As our profession works toward a conception of a more grounded music education, we must concede that there is a difference between simply having music in the schools and educating through and with familiar melodies. Teachers must begin to take an active role in shaping what an educational encounter with familiar melodies looks like. A garage band approach has the advantage of circulating knowledge and skill. But more importantly, this method offers a democratic vision of interacting musically with the participants we teach (Allsup, 2011).

In a study on interval identification, it is found that ascending consonant intervals of perfect 4<sup>th</sup>, perfect 5<sup>th</sup> and perfect octave are ones that are most correct, while ascending dissonant intervals of a tritone, minor 6<sup>th</sup> and minor 7<sup>th</sup> are least correct (Jeffries, 1970). It has also been proven that larger intervals are usually transcribed incorrectly as opposed to smaller intervals (Ortmann, 1934). Testing intervals at random and intervals in order of difficulty have been studied. Results have shown that intervals at random order had better learning results as compared to intervals in order of difficulty (Jeffries, 1967). This research will investigate the effectiveness of using intervals from familiar melodies in pitch identification according to the scale degree, and will be evaluated with the results from a previous study whereby intervals of a tritone, minor 6<sup>th</sup> and minor 7<sup>th</sup> are the consistently incorrectly identified intervals (Jeffries, 1967). Further investigation can also be conducted according to the order of

difficulty of descending melodic intervals, based on an earlier study on the order of difficulty of ascending melodic intervals (Jeffries, 1970).

Significant studies have been presented in various forms of interval identification, particularly the difficulty level of identifying intervals (Jeffries, 1967, 1970), and have proven that the musical background of the subjects has no affect on the difficulty of interval identification. Some of the subjects of these studies had no form of aural training in identifying intervals (Jeffries, 1967) while some are undergraduate music majors who have some form of aural skills training in interval identification (Killam, Lorton & Schubert, 1975). These results suggest that the difficulty of intervallic content affects the challenges of melodic dictation. The purpose of this study was to look at the effectiveness of using the first two notes of a familiar tune to identify intervals.

Using melodic intervals to enhance pitch identification in melodic dictation will help in dictating tonal as well as atonal melodies. Music curricular is designed to help participants develop their aural skills by introducing more chromaticism and atonal melodies as they progress through the syllabi. The average music student usually relates everything that they sing or play to old or new materials looking for melodic or harmonic security. A system of teaching sight singing based on melodic intervals is recommended to cope with atonalities to the tonal-oriented music reading systems (Penna, 1966).

## **2.5 Musicianship**

“Musical activity involves nearly every region of the brain that we know about, and nearly every neural subsystem.” (Levitin, p.299) The practice that one does to increase musicianship amongst many, are to increase knowledge of music theory, to heighten

sight-reading and improvisation skills, and to quicken the artistic intelligence (Levitin, p.300). As one's musicianship skills mature, one becomes a better artist and employability skills are upgraded too. For example, knowledge in aural skills equips one with better-trained hearing abilities to transcribe or learn a tune for last minute gigs. Incorporating a few routines to the practice can expand musicianship.

Amongst the few qualities of having good musicianship is being a perceptive listener, which means having the ability to appreciate any musical content, whether gradually or otherwise. Listening skills have evolved and become more perceptive by being able to identify and summarize the music heard as a whole. This encompasses the basic aural knowledge and distinct musical styles. This is apparent in the students that have been taught and observed. Students with a wider knowledge of listening repertoire tend to excel in their pitching and listening skills as oppose to their counterparts who lack in the area. Therefore, listening is an integral part of musicianship maturity. A musician will be equipped with musicianship maturity by being able to interpret a variety of styles and genres beyond the musical streams of pop or classical (Klickstein, 2009)

Having good sight-reading skills are also part of having good musicianship. Being able to associate the pitches to how it sounds like is very crucial. This research aims to improve this quality. Musicians should reinforce the basic skills of reading to make sure that practice time is not wasted. This includes scan first, count mentally, look ahead, keep going, express the music, and withdraw the effort. Studies have shown that poor sight-reading is common in ensemble learning particularly in choir. This is mainly due to rote learning and teaching instead of developing note-reading skills (Demorest & May, 1995, Elliott, 1982).

Studies have also suggested that poor sight-reading ability is a general problem across the music academia. This is because of insufficient follow-up by the participants and possibly inadequate methodology in teaching sight-reading (Elliott, 1982, Phillips, 1996). By conducting this study of enhancing interval identification, this could be a solution, albeit a temporary one if follow-ups are not done, to the problem of poor sight-readers.

A fun and satisfying way to enhance musicianship is through improvisation. There are misconceptions that improvisation is an exclusive skill to jazz players only. However, improvisation is for both artistic and practical reasons. Learning the fundamentals of improvisation, which includes the aural skills of dictation, will equip one with vocabulary that can help in the development of one's artistry in music. At the end of the day, having the basic skills will help in many other areas of musical development and expressing one's self in the art of music (Klickstein, 2009).

The study of general music topics is common. Topics such as theory, ear training, music history and literature are amongst the topics that will impact one's knowledge and artistry immensely. These topics are essential and proven to be important, enough to be part of any music curricula at any level of music study. The roles of environmental influences, inborn talent and sheer hard work can affect high musical capabilities. Musicians spend vast amounts of time and energy acquiring and refining their skills. There are certain training approaches that they can use to generate better or quicker performance results. This is the result from musical learning through prior information and practice. These discussions are in favor of the development of musicianship and its association of reading, notating and listening to music as an entity (Petzold, 1959; Mursell, 1958; Mainwaring, 1941). A person's music culture can be discovered by the ability to read music, as many see music as a language that is spoken

by various intonations and sounds. The ability to interpret notation independently makes music personal with boundless opportunities of discovering new music with little constraints and inspirational levels of musicianship (Mainwaring, 1941).

## **2.6 Summary**

The function of this chapter was to review literature and research relevant to the study. The five areas of literature that were reviewed include solfège, musicianship, aural skills, melodic dictation, intervals and familiar melodies. The latter three were identified as closely related areas of which the collective findings provided guidance to the development and results of this study. The use of familiar melodies to identify intervals were discussed and tested in this study.

The challenges faced in aural skills training of the younger generation has been addressed. Fear of failing, inconsistent and clear methods of teaching are some of the negative observations on aural training (Kendal, 1998; Harrison, Asmus, Serpe, 1994). The use of Kodaly's method has yet to find its way into the training of a more advanced curriculum (Giles, 1991; Houlahan & Tacka, 1990), while 1% of music schools in the United States do not even have aural skills in their curriculum (Pembroke and Riggins, 1990). The benefits of aural training has also been investigated and proven to be a tool in improvisation as it gives the ability to listen and respond naturally to harmonic changes (Dobbins, 1980). It develops and understanding of phrase and melody, harmony and tonality (Pembroke and Riggins, 1990), as well as ability to recognize and remember pitches in dictation (Hartshorn, 1958; Myers, 1961; Walton, 1966).

Two solfège systems were also addressed in this chapter. Although it may be viewed as just pitches represented by syllables (Mursell, 1958), these syllables have

been proven to improve pitch recognition of music intervals and enhances the understanding of music theory (Langley, 1963). The debate on the better solfège system of fixed-Do and movable-Do has been long-standing. While moveable-Do is flexible for musicians who work within tonal boundaries (Casarow, 2002), fixed-Do is specific and helps to strengthen relationships between pitches and its keys (Hindermith, 1949; Levine, 2014). However, the lack of study to compare the viability of both solfège systems (Casarow, 2002) and the insignificance of the usage of either of the two systems in the teachings of transposition and sight-reading (Henry and Demorest, 1994) further suggest that more research could be done to weigh-in which is the more superior solfège system.

The strength in aural skills is a big factor in the ability of dictation melodies. The aural training that one goes through in their music education includes dictation and sight singing. Having the skills of hearing pitches, the ability to identify the intervals that make contours of melodies are vital in the process of melodic dictation. This ties in with the ability to read and notate music. Therefore, theory and aural should not be separated in terms of learning the skills. It is equally important to have the ability to read and write music notes and symbols, as it is important to identify and pitch them aurally.

The topic that strongly ties in with the purpose of this study is melodic dictation. While the approaches to melodic dictation are effective (Killam, Lorton & Schubert, 1975; Hoppe, 1991; Karpinski, 2000), it still poses challenges, as it needs many listening skills and consideration of approaches to create a consistent learning ability (Klonoski, 2005, p. 55) and the lack of attention and focus when doing dictation (Paney, 2007; Sisley, 2008). Dictation is also tied to music reading where if music reading is poor (Petzold, 1959), the ability to read and understand the notation that is

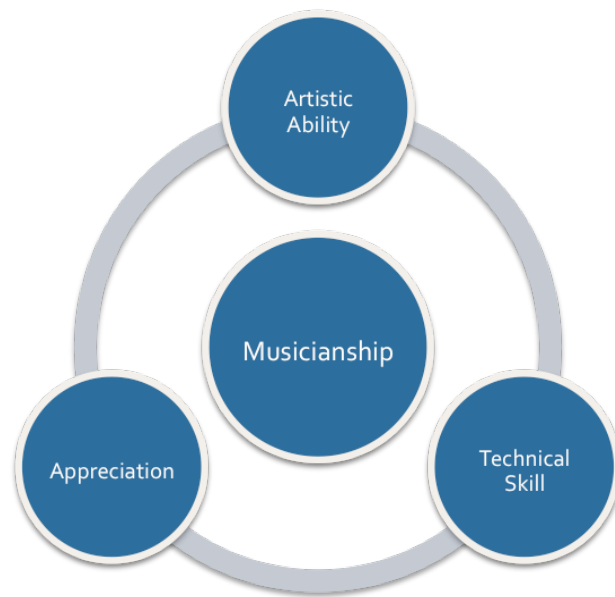


heard will also be weak (Leonhard and House, 1959). It was also discussed that the relation between aural and visual needs more investigation (Petzold, 1959), it is clear that aural listening with aural response is the most effective dictation method (Chittum, 1967).

The use of familiar melodies is one of the methods used to identify intervals. Although these familiar melodies may differ in terms of cultural background and the various music pedagogies like Orff, Kodaly and Suzuki, the ultimate goal is the same, which is to have an innate sense of identifying intervals based on the pitches heard. This in turn, enhances on the abilities to dictate melodies heard. The literature on the use of familiar melodies were reviewed for this research is because the influence of well-known melodies as part of incorporating into the evolving music repertoire of today's generation (Dunbar-Hall & Wemyss, 2000; Mohd. Shah, 2006), and the insight of various difficulty levels of melodic interval identification is factored by the distance of the melodic intervals (large and small intervals) (Jeffries, 1967, 1970; Killam, Lorton & Schubert, 1975).

Amongst the qualities of developing wholesome musicianship is being a perceptive listener. The level of music appreciation will enable one's self to expand listening repertoire, enhance understanding of music genres and literature (Klickstein, 2009), as well as encourage the improvement of one's technical skills. Achieving a high level of technical ability provides a musician with the ability to analyze and structurally organize one's practice methods when attempting a difficult piece to learn (Elliott, 1982; Phillips, 1996). The most abstract of the three components is artistic ability. This is the missing link that is within today's musicians. The ability to have artistry inspires musicians to have meaningful 'conversations' through their music and the ability to interpret the composer's intent of the work (Podium 2012). When the missing link is

connected, only then will a musician achieve true musicianship that not only covers the theory and aural, but also creativity and originality.



**Figure 2.1:** A functional definition of musicianship (Podium, 2012)

### CHAPTER 3: METHODOLOGY

The objective of this quantitative research was to investigate the accuracy of interval identification by using familiar melodies for undergraduate music majors at a private university in Kuala Lumpur. The participants were divided into two groups. A random sampling of 60 respondents assisted with this study. These respondents came from various music backgrounds. 30 participants had not learned any methods of identifying intervals using familiar melodies while another 30 participants have used this method prior to this study. The participants have used this method have learned this from their private instructors or tutors in their formal music education prior enrolling to university. The independent variables are melodic interval complexity and solfège system while the dependent variable is pitch accuracy.

Prior to the treatment, participants were introduced to interval singing and identification within a range of an octave. This method is based on a research that shows how rapidly the brain responds to musical training by using five-finger piano exercises as training test to demonstrate the changes in the motor cortex within minutes of practicing such sequences (Krof, 2014). When we listen to music, we actually perceive multiple attributes like tone, pitch, timbre, rhythm, loudness, tempo and the overall shape of melodies. (Levitin & Rogers, 2005). Pitch in particular, is selected to conduct this research as it is shown in assessments that participants are relatively weak in identifying pitches, especially with leaps of more than a perfect 5<sup>th</sup> apart. Participants are also unfamiliar with intervals that are descending in motion or below a given note.

Research has been done on the effects of musical training to distinguish the brains of musically gifted children. The structural changes observed with musician's brains were strongly correlated with the age at which musical training began and with the

intensity of practice and rehearsal (Hutchinson, Lee, Gaab & Schlaug, 2003). This theory is viable to the research of participants with prior aural training and the consistency and frequency of practice and rehearsal on pitch dictation.

### **3.1 Audio/Visual Procedures**

The questions prepared for the pre-test and post-test for the participants to identify and dictate the correct answers were done using the Finale Notation Software. Formatting of questions was done using Microsoft Word for Mac 2008. All sessions were recorded using the audio recording software of a Samsung Galaxy Note 3. The use of the device helped in minimizing background noise and technical difficulties to prevent data loss. Pre-test, treatment and posttest was conducted using a Kawai BL-12 piano, whereby the interval identification questions were played. Various music excerpts based on the chosen familiar melodies as seen in Table 3.4 were found on Youtube.

### **3.2 Data Collection and Analysis**

There were two parts to the data collection. Firstly, the data collected from both controlled and treatment groups whose identified intervals were without reference to familiar melodies. Data collection was in the form of prepared questions in the format of a pop quiz of interval identification as answered and submitted by the participants. The second part to the data collection is in the same format as the pretest, which both groups will be given a pop quiz of interval identification. The treatment group will go through seven sessions of treatment in which familiar melodies were introduced to them to identify intervals. They were given 30-minute practice sessions every alternate day over the course of 3.5 weeks. Various interval identification exercises were carried out to familiarize the suggested familiar melodies. Intervals up to a perfect 5<sup>th</sup> will be

carried out in the first-half of the week of the treatment, followed by intervals up to a perfect octave in the second-half of the week.

### 3.3 Participants

A total of 60 participants participated in this study. Participants in this study are music major participants from a private university in Kuala Lumpur. They comprise of participants in the Foundation program, and are enrolled in the 2-levels of sequential Practical Skills courses. Participants were a mix of male and female of pianists and non-pianists. Self-report surveys completed by each participant will be used to collect demographic information on the participant population.

**Table 3.1:** Group demographics by gender

| <b>Gender</b> | <b>Control Group</b> | <b>Treatment Group</b> |
|---------------|----------------------|------------------------|
| Male          | 12                   | 14                     |
| Female        | 18                   | 16                     |
| Total (N)     | 30                   | 30                     |

**Table 3.2:** Group demographics by instruments

| <b>Instrument</b>  | <b>Control Group</b> | <b>Treatment Group</b> |
|--|----------------------|------------------------|
| Piano (N)  | 20                   | 15                     |
| Non-piano (Guitar, Drums, Voice, Violin, Double Bass, Saxophone) (N) | 10                   | 15                     |
| Total (N)  | 30                   | 30                     |

### 3.4 Pre-test

Participants were divided into one controlled group and one treatment group. Each group has a total of 30 participants. Participants in each group were assessed 12 types of intervals, one of each interval in a scale. The questions for both tests had the same

amount of intervals, but used in a different order. These intervals were at random and participants were required to identify the intervals after hearing it played once on the piano.

### 3.5 Activities of both groups

The table below shows a summary of activities of the control and treatment groups. For both groups, a pre-test and post-test was conducted to gather the data for this study. Both the control and treatment groups also had activities such as interval identification using solfège and singing exercises of intervals using solfège as part of the lesson plan. Both groups had similar activities throughout the study, with the exception of activities 2 and 3 where these activities were not administered for the controlled group. The purpose of the activities of introducing the familiar melodies and using the familiar melodies to identify intervals is to investigate its effectiveness by measuring the interval identification accuracy in the post-test of this study.

**Table 3.3:** Difference of activities of both groups

| No. | Activity   | Control Group | Treatment Group |
|-----|--|---------------|-----------------|
| 1.  | Pre-test   | √             | √               |
| 2.  | Introduction of familiar melodies                                      | X             | √               |
| 3.  | Training of singing and listening to intervals using familiar melodies | X             | √               |
| 4.  | Identify intervals using solfège                                       | √             | √               |
| 5.  | Sing exercises of intervals using solfège                              | √             | √               |
| 6.  | Post-test  | √             | √               |

### 3.6 Melodies

The first two pitches found in the melody of familiar melodies were used as reference to intervals. These melodies were introduced and administered to the treatment group in the 30-minute practice time. This study aimed to investigate the effectiveness of familiar melodies in identifying intervals to dictate pitches accurately. The melodies used in this study are shown in Table 3.4.

**Table 3.4:** Melodies used in the treatment

| <b>Interval</b>         | <b>Melodies</b>  |
|-------------------------|--|
| minor 2 <sup>nd</sup>   | Für Elise (Beethoven), ‘The Entertainer’ (Joplin)  |
| Major 2 <sup>nd</sup>   | ‘Frère Jacques’, ‘Selamat Hari Raya’   |
| minor 3 <sup>rd</sup>   | ‘Greensleeves’, Theme from <i>Shanghai Beach</i>   |
| Major 3 <sup>rd</sup>   | ‘When the Saints Go Marching In’, ‘Four Seasons:Spring’ (Vivaldi),   |
| Perfect 4 <sup>th</sup> | ‘We Wish You a Merry Christmas’, ‘Someday My Prince will Come’ from Disney’s <i>Snow White and the Seven Dwarves</i> |
| Tritone                 | Opening theme to <i>The Simpsons</i> , Maria from <i>West Side Story</i>   |
| Perfect 5 <sup>th</sup> | ‘My Favorite Things’ from <i>The Sound of Music</i> , ‘Can’t Help Falling in Love’ (Presley)                         |
| minor 6 <sup>th</sup>   | ‘Black Orpheus’ (Bonfa) and ‘Theme Song from <i>Love Story</i> ’   |
| Major 6 <sup>th</sup>   | ‘My Way’ (Sinatra), ‘My Bonnie’  |
| minor 7 <sup>th</sup>   | Watermelon Man’ (Hancock), ‘Kiss Goodbye’ (Wang)   |
| Major 7 <sup>th</sup>   | Don’t Know Why (Jones)   |
| Perfect 8 <sup>th</sup> | ‘(Somewhere) Over the Rainbow’ (Harold Arlen), Blue Bossa (Kenny Dorham)   |

### 3.7 Treatment Group

The treatment group was trained to use intervals from familiar melodies as a reference to aid in interval identification. They had one 30-minute session per week during the treatment. A typical session is as follows:

First 10 minutes (0:10): Introduction of the familiar melodies that had the intervals to be learned for the week. Participants were also asked to suggest other familiar

melodies that they related well with apart from those that were introduced in the treatment. The participants were asked to remember the first two pitches.

Next 5 minutes (0:15): The identification of interval in relation to the familiar melodies using solfège. Participants were introduced to both solfège systems of fixed-DO and moveable-DO.

Next 5 minutes (0:20): Participants were given examples of interval exercises to sing, using both solfège systems (See Appendix B). These were administered with the help of a KAWAI upright piano.

Final 10 minutes (0:30): Participants were required to sing the learned interval of the session individually as a summary for the learned intervals of the session.

### **3.8 Treatment Sessions for Treatment Group**

The order of this treatment was based on the conditions that participants are most comfortable and familiar. Hence, beginning with melodies that they can relate to most, with the sound of the intended interval incorporated – the first two pitches of the melody. This was followed by the relation of the interval sounds to solfège. The reason for using two types of solfège system was due to 2 types of system learners. Some had gone through the YAMAHA ear-training syllabus, which uses fixed-Do system. This was identified in Part 3 of the questionnaire conducted in the pre-test of this study. Those who did not go through the YAMAHA ear-training syllabus were introduced to the moveable-Do system, as this was the practice throughout the adopted Kodaly method by the university. The sessions were done in the particular order of intervals is because smaller intervals are easier to relate and identify, thus making them the most correctly identified intervals (Ortmann, 1934; Jeffries, 1970). Major and minor 3rds were used first as it has the strongest harmonic relation (i.e. major and minor triads). It



becomes a ‘compass’ to its surrounding intervals of 2nds, 4ths and 5ths (Jeffries, 1967).

The following is a detailed description of each session conducted with the treatment group:

a. Session One

The first session for the treatment group included the pre-test. The demographic survey was included in the pre-test, which was interval identification of twelve (12) questions, ranged between minor 2<sup>nd</sup> and perfect octave intervals. Once that had been done, the treatment group underwent their first two interval identifications; Major and minor 3rds.

For these two intervals, familiar melodies from pop songs and folk melodies were introduced. These include ‘When the Saints Go Marching In’, ‘Kumbaya’ and ‘Four Seasons: Spring’ for interval of a major 3<sup>rd</sup>; and ‘Greensleeves’, ‘Shanghai Beach’ and ‘Bad’ for interval of a minor 3<sup>rd</sup>. Participants were asked to suggest other familiar melodies that they could relate to these intervals of 3rds and they came up with ‘As Long As You Love Me’, ‘A Time for Us’, ‘I Want it That Way’ and ‘Wake Up Call’ (See Appendix A). There was a suggestion of a minor 3<sup>rd</sup> interval in the opening melody of ‘Be Our Guest’ from the Disney animated movie *Beauty and the Beast*. Although the intervallic identification is correct, but it lead to a first-inversion of a major triad (mi-so-do), therefore not part of the list as it would cause confusion to the quality of the interval in terms of the overall pitch and sound of the melody.

In the next 5 minutes of the session, participants were introduced to the solfège systems of fixed-DO and moveable-DO. Moveable-DO was used to pitch and sing stand-alone intervals, thus for major 3<sup>rd</sup>, they were required to sing do-mi. This is in

reference to a C major scale, which does not have any sharps or flats, thus, neutral. Participants were required to sing this major 3<sup>rd</sup> interval using the solfège of do-mi --- and then resolving to 'do' again, hence do-mi-do --- in succession on various pitches or notes. These notes were given, starting from the middle C and chromatically descended the keys, reaching to G below middle C (G3). For a minor 3<sup>rd</sup> interval, participants were introduced to a minor scale, hence the solfège of la-do --- and then resolving to 'la' again, hence la-do-la --- in reference to an A natural minor scale, also a neutral scale. Participants were required to sing a minor 3<sup>rd</sup> interval using the solfège of la-do in succession on various pitches or notes. These notes were given, starting from A below middle C (A3) and chromatically ascended the keys, reaching to E above middle C (E4).

Participants were then given a set of sample exercises that included the intervals of major 3<sup>rd</sup> and minor 3<sup>rd</sup> intervals. All sample exercises were in the treble clef and ranged from keys of up to 1 sharp and 1 flat. Participants were required to sing these sample exercises using the fixed-DO system. The main reason for administering the fixed-DO system is because when these participants continue onto the aural syllabus, they will be required to use fixed-DO when they do the sight-singing component. Due to the nature of the fixed-DO syllables, participants were also introduced to 'fi' for F-sharp and 'te' for B-flat for the relating keys of G major-E minor and F major-D minor (See Appendix B).

In the final 10 minutes of the first session, participants were asked to pitch and sing the intervals of major 3<sup>rd</sup> and minor 3<sup>rd</sup> as learned in the lesson for the day. Firstly, they were required to sing the interval of a major 3<sup>rd</sup> using moveable-DO on any given note on the piano. After completing a round for the entire class, once again, they were

required to sing, this time the interval of a minor 3<sup>rd</sup> using moveable-DO on any given note on the piano.

b. Session Two

The second session saw the treatment group underwent another two interval identifications using familiar melodies; Major and minor 2nds.

For these two intervals, familiar melodies of festive melodies and classical melodies were introduced. These include ‘Silent Night’ and ‘First Noel’ for interval of a major 2<sup>nd</sup>; and ‘Für Elise’, and ‘Habanera from *Carmen*’ for interval of a minor 2<sup>nd</sup>. Participants were asked to suggest other familiar melodies that they could relate to these intervals of 2nds and they came up with ‘Frère Jacques’, ‘Selamat Hari Raya’, ‘Gong Xi, Gong Xi’, ‘Opening theme to Phantom of the Opera’ and ‘Libertango’ (See Appendix A). A participant suggested that the chromatic scale is the best example of a minor 2<sup>nd</sup> interval. However, the criterion is the first two notes of a familiar melody. Hence, the suggestions of ‘Flight of the Bumble Bee’ and ‘The Entertainer’ were added to the list of familiar melodies for the identification of a minor 2<sup>nd</sup> interval.

In the next 5 minutes of the session, participants were reintroduced to the solfège systems of fixed-DO and moveable-DO. Moveable-DO was used to pitch and sing stand-alone intervals, thus for major 2<sup>nd</sup>, they were required to sing do-re. This is in reference to a C major scale, which does not have any sharps or flats, thus, neutral. Participants were required to sing this major 2<sup>nd</sup> interval using the solfège of do-re --- and then resolving to ‘do’ again, hence do-re-do --- in succession on various pitches or notes. These notes were given, starting from the middle C and chromatically descended the keys, reaching to G below middle C (G3). For a minor 2<sup>nd</sup> interval, participants were reintroduced to a minor scale, and they were asked to identify the

minor 2nds found in the scale. Participants identified ‘ti-do’ and ‘mi-fa’ as the two semitones or the two intervals that were a minor 2<sup>nd</sup> apart in the scale. Thus, the solfège of ti-do --- and then resolving to ‘ti’ again, hence ti-do-ti --- in reference to an A natural minor scale, also a neutral scale. Participants were required to sing a minor 2<sup>nd</sup> interval using the solfège of la-do in succession on various pitches or notes. These notes were given, starting from A below middle C (A3) and chromatically ascended the keys, reaching to E above middle C (E4).

Participants were then given a set of sample exercises that included the intervals of major 2<sup>nd</sup> and minor 2<sup>nd</sup> intervals. All sample exercises were in the treble clef and ranged from keys of up to 1 sharp and 1 flat. Participants were required to sing these sample exercises using the fixed-DO system. The main reason for administering the fixed-DO system is because when these participants continue onto the aural syllabus, they will be required to use fixed-DO when they do the sight-singing component. Due to the nature of the fixed-DO syllables, participants were also introduced to ‘fi’ for F-sharp and ‘te’ for B-flat for the relating keys of G major-E minor and F major-D minor (See Appendix B).

In the final 10 minutes of the second session, participants were asked to pitch and sing the intervals of major 2<sup>nd</sup> and minor 2<sup>nd</sup> as learned in the lesson for the day. Firstly, they were required to sing the interval of a major 2<sup>nd</sup> using moveable-DO on any given note on the piano. After completing a round for the entire class, once again, they were required to sing, this time the interval of a minor 2<sup>nd</sup> using moveable-DO on any given note on the piano.

### c. Session Three

The third session saw the treatment group underwent another two interval identifications using familiar melodies; Perfect 4<sup>th</sup> and Perfect 5<sup>th</sup>.

For these two intervals, familiar melodies of festive melodies and melodies from Disney animations were introduced. These include ‘We Wish You a Merry Christmas’ and ‘Someday My Prince will Come’ from Disney’s *Snow White and the Seven Dwarves* for interval of a perfect 4<sup>th</sup>; and ‘My Favorite Things’ from *The Sound of Music*, and movie themes from *Superman* and *Star Wars* for interval of a perfect 5<sup>th</sup>. Participants were asked to suggest other familiar melodies that they could relate to these intervals of 4ths and they came up with ‘Beyond the Sea’ from Pixar’s *Finding Nemo*, ‘Amazing Grace’, classical music of *Eine kleine Nachtmusik* by Mozart and ‘Farandole’ from Bizet’s *L’Arseinne* (See Appendix B). For intervals of a perfect 5<sup>th</sup>, participants suggested other television and movie themes like ‘E.T.’ and ‘The X-files’. Other suggestions included ‘Can’t Help Falling in Love’ from *Lilo and Stitch the Movie*, (originally by Elvis Presley) (See Appendix A).

In the next 10 minutes of the session, participants were reintroduced to the solfège systems of fixed-DO and moveable-DO. Moveable-DO was used to pitch and sing stand-alone intervals, thus for perfect 4<sup>th</sup>, they were introduced to sing so-do. This is in reference to a perfect cadence of chord V to a chord I. However, they were also given alternatives, in reference to either of the scales of major and minor, thus using do-fa, la-re or any other solfège that is possible for a perfect 4<sup>th</sup> interval. Then, participants were required to sing the perfect 4<sup>th</sup> interval using the solfège of so-do, which is in reference to the perfect cadence. Subsequently, participants were also asked to sing using do-fa --- and then resolving to ‘do’ again, hence do-fa-do --- in succession on various pitches. These notes were given, starting from the middle C and chromatically descended the keys, reaching to G below middle C (G3). For a perfect 5<sup>th</sup> interval, we

continued to use both the major and minor scales as references. Participants identified six possibilities of solfège to sing a perfect 5<sup>th</sup> interval. However, participants decided to use do-so --- and then resolving to ‘do’ again, hence do-so-do --- and they were required to sing a perfect 5<sup>th</sup> interval using the solfège of do-so in succession on various pitches or notes. These notes were given, starting from A below middle C (A3) and chromatically ascended the keys, reaching to E above middle C (E4).

Participants were then given a set of sample exercises that included the intervals of perfect 4<sup>th</sup> and perfect 5<sup>th</sup> intervals. All sample exercises were in the treble clef and ranged from keys of up to 2 sharps and 2 flats. Participants were required to sing these sample exercises using the fixed-DO system. The main reason for administering the fixed-DO system is because when these participants continue onto the aural syllabus, they will be required to use fixed-DO when they do the sight-singing component. Due to the nature of the fixed-DO syllables, participants were also introduced to ‘di’ for C-sharp and ‘me’ for E-flat for the relating keys of D major-B minor and Bb major-G minor (See Appendix B).

In the final 10 minutes of the third session, participants were asked to pitch and sing the intervals of perfect 4<sup>th</sup> and perfect 5<sup>th</sup> as learned in the lesson for the day. Firstly, they were required to sing the interval of a perfect 4<sup>th</sup> using moveable-DO on any given note on the piano. After completing a round for the entire class, once again, they were required to sing, this time the interval of a perfect 5<sup>th</sup> using moveable-DO on any given note on the piano.

#### d. Session Four

The fourth session saw the treatment group underwent two interval identifications using familiar melodies; Major 6<sup>th</sup> and Major 7<sup>th</sup>. Song selections for these 2 intervals

were more limited, especially Major 7<sup>th</sup> due to the dissonance of the interval, which is rarely heard in familiar melodies. The only recognizable melody for this interval was the first two notes of the first verse in Norah Jones' hit tune, 'Don't Know Why'. The Major 6<sup>th</sup> had much more choices, having familiar melodies like Diana Ross' 'Tonight, I Celebrate My Love' and Frank Sinatra's 'My Way'. Surprisingly, participants knew these songs, even though they are not from the generation when these two songs were familiar. Other suggested songs were 'Days of Wine and Roses' as well as folk tune 'My Bonnie'. The Malaysian national anthem, 'Negaraku', a melody that is closer to home was brought up in our discussion. However, it is pointed out that the Major 6<sup>th</sup> interval is heard in the second and third notes of the melody rather than the first two notes. Nevertheless, the interval is identifiable, making it viable in the recognition of a Major 6<sup>th</sup> interval (See Appendix A).

In the next 10 minutes of the session, participants were reintroduced to the solfège systems of fixed-DO and moveable-DO. Moveable-DO was used to pitch and sing stand-alone intervals, thus for Major 6<sup>th</sup>, they were introduced to sing do-la. In the previous session, the perfect 4<sup>th</sup> and 5<sup>th</sup> intervals were conducted. Therefore, as a fast-track to hear the interval of Major 6<sup>th</sup>, participants were required to sing the perfect 5<sup>th</sup> interval first. This also served as a revision exercise for them. Once they have established the sound of Perfect 5<sup>th</sup> (do-so), they easily pitched the interval of Major 6<sup>th</sup> (do-la) as it is just the next note from 'so'. Again, they were given alternatives in reference to the major scale, thus using re-ti, fa-re and so-mi were possible for a Major 6<sup>th</sup> interval. Participants were then made to sing the Major 6<sup>th</sup> intervals in succession based on the root note beginning on middle C and chromatically ascended the keys, reaching to A4.

For the exercise of pitching and singing the Major 7<sup>th</sup> interval, the instructor used a different approach. Based on the given note 'do', participants were asked to sing the next solfège downwards, which is a minor 2<sup>nd</sup> in descending motion; hence do-ti. Participants were then asked to sing the minor 2<sup>nd</sup> solfège downwards then leap to the 'ti' on the higher octave, which resulted in do-ti-do-ti (C4-B3-C4-B4). This proved to be very challenging for the participants as they were not able to hear the interval as clearly as they should, even with the familiar melody reference of Norah Jones' 'Don't Know Why'. Therefore, this method was considered possible, but not effective as the pitching of a Major 7<sup>th</sup> was clearly challenging, even though a familiar melody was identified as a reference for identification (See Appendix A).

Participants were then given a set of sample exercises that included the interval of Major 6<sup>th</sup> intervals. All sample exercises were in the treble clef and ranged from keys of up to 2 sharps and 2 flats. Participants were required to sing these sample exercises using the fixed-DO system. The main reason for administering the fixed-DO system is because when these participants continue onto the aural syllabus, they will be required to use fixed-DO when they do the sight-singing component. Due to the nature of the fixed-DO syllables, participants were also introduced to 'di' for C-sharp and 'me' for E-flat for the relating keys of D major-B minor and Bb major-G minor (See Appendix B).

In the last 10 minutes of the fourth session, participants were asked to pitch and sing the intervals of Major 6<sup>th</sup> as learned in the lesson for the day. They were also made to revise the intervals of up to perfect 5<sup>th</sup>. Firstly, they were required to sing the interval of a Major 6<sup>th</sup> using moveable-DO on any given note on the piano. The Major 7<sup>th</sup> interval was revisited again in the sixth after the introduction and learning of Perfect octave.



e. Session Five

The fifth session saw the treatment group underwent two interval identifications using familiar melodies; minor 6<sup>th</sup> and minor 7<sup>th</sup>. Song selections for these 2 intervals were also limited as to Major 6<sup>th</sup> and Major 7<sup>th</sup> due to the dissonance and distance of the intervals, which is rarely heard in familiar melodies. Large intervallic leaps are rarely heard of, as familiar songs are mostly stepwise. For minor 6<sup>th</sup>, the two choices of bossa nova standard, ‘Black Orpheus’ and ‘Theme Song from *Love Story*’ were the suggested familiar melodies to recognize the interval of minor 6<sup>th</sup>. The former is identifiable by participants in the contemporary program, while the latter was identifiable by most of the participants, as they have heard of the tune before. Both melodies also seemed ideal as one featured the minor 6<sup>th</sup> interval upward (above a given note) and the other a minor 6<sup>th</sup> interval downward (below a given note). For minor 7<sup>th</sup>, there were also only 2 suggested familiar melodies. Participants in the contemporary program instantly recognized ‘Watermelon Man’ by Herbie Hancock. The first two notes of its melody is a minor 7<sup>th</sup> downwards. The other familiar melody is ‘Kiss Goodbye’, made famous by Wang Lee Hom. The upward minor 7<sup>th</sup> interval is found in the first two notes of the chorus. While the former related better to the participants in the contemporary program, the latter too, was familiar as a majority of the participants come from a background of Chinese education or listens to songs in Mandarin (See Appendix A).

In the next 10 minutes of the session, participants were reintroduced to the solfège systems of fixed-DO and moveable-DO. Moveable-DO was used to pitch and sing stand-alone intervals, thus for minor 6<sup>th</sup>, they were introduced to sing la-fa. Participants were asked to sing a minor triad of la-do-mi (as required of the course syllabus). Then, they were asked to omit the 3<sup>rd</sup> of the triad, hence singing only la-mi.

Once they have established the interval of Perfect 5<sup>th</sup> (la-mi), they pitched the interval of minor 6<sup>th</sup> (la-fa) as it is just the next note from 'mi'. However, many sang the pitch of a Major 6<sup>th</sup> because la-mi was identical to do-so; both being a Perfect 5<sup>th</sup> interval. Participants were asked to think back of the familiar melodies introduced at the beginning of the session and sing out the melody of the familiar melodies introduced. Then, were asked to sing the minor 6<sup>th</sup> interval of la-fa and back to 'la'. This enforced their listening and pitching skills. Participants were then made to sing the minor 6<sup>th</sup> intervals in succession based on the root note beginning on A3 and chromatically ascended the keys, reaching to E4.

For the exercise of pitching and singing the minor 7<sup>th</sup> interval, participants were told to use the solfège of so-ti-re-fa that is based on a dominant seventh chord (V7) as it related to the perfect cadence of a dominant chord (V) resolving to a tonic chord (I). Participants were told to sing the dominant seventh chord in ascending and descending motion of 'so-ti-re-fa-re-ti-so', and this was done for five rounds, chromatically rising in key from A3 to C#4. Then, participants were asked to omit the 3<sup>rd</sup> and 5<sup>th</sup> of the chord (ti and re), thus pitching only 'so' and 'fa', resulting in the singing of the melodic interval of a minor 7<sup>th</sup> (so-fa). Participants were told of the two possible methods to identify and sing the minor 7<sup>th</sup> intervals. First is the reference to the familiar melodies and the other was in reference to the dominant seventh chord.

Participants were then given a set of sample exercises that included the interval of minor 7<sup>th</sup> intervals. All sample exercises were in the treble clef and ranged from keys of up to 3 sharps and 3 flats. Participants were required to sing these sample exercises using the fixed-DO system. The main reason for administering the fixed-DO system is because when these participants continue onto the aural syllabus, they could be required to use fixed-DO when they do the sight-singing component. Due to the nature

of the fixed-DO syllables, participants were also introduced to ‘si’ for G-sharp and ‘le’ for A-flat for the relating keys of A major-F# minor and Eb major-C minor (See Appendix B).

In the final 10 minutes of the fifth session, participants were asked to pitch and sing the intervals of minor 6<sup>th</sup> and minor 7<sup>th</sup> as learned in the lesson for the day. Firstly, they were required to sing the interval of a minor 6<sup>th</sup> using moveable-DO on any given note on the piano. After completing a round for the entire class, once again, they were required to sing, this time the interval of a minor 7<sup>th</sup> using moveable-DO on any given note on the piano.

f. Session Six

The sixth session saw the treatment group underwent two interval identifications using familiar melodies; Perfect octave and Major 7<sup>th</sup>. For Perfect octave, the familiar tune of ‘(Somewhere) Over the Rainbow’ sung by Judy Garland in *The Wizard of Oz* and Blue Bossa, another bossa nova standard, were the suggested familiar melodies to recognize the interval of Perfect octave. While ‘Blue Bossa’ related better to the participants in the contemporary program, ‘Over the Rainbow’ is a classic tune that everyone is able to identify it immediately within the first two notes of the melody. Participants also suggested the first two notes of the melody that is found in Liszt’s third etude from *Grandes études de Paganini* (Grand Paganini Études) given the title *La Campanella* (See Appendix A).

In the next 10 minutes of the session, participants were reintroduced to the solfège systems of fixed-DO and moveable-DO. Moveable-DO was used to pitch and sing stand-alone intervals, thus for perfect octave, they were introduced to sing do-do’. Participants were asked to sing a major triad and end with the octave of the tonic in

ascending and descending motion (do-mi-so-do'-so-mi-do). Then, they were asked to omit the 3<sup>rd</sup> and 5<sup>th</sup> of the triad, hence singing only both tonics in its different octave. Participants were then made to sing the perfect octave intervals in succession based on the root note beginning on G3 and chromatically ascended the keys, reaching to E4.

Participants were then given a set of sample exercises that included the intervals of perfect octave and Major 7<sup>th</sup>. All sample exercises were in the treble clef and ranged from keys of up to 3 sharps and 3 flats. Participants were required to sing these sample exercises using the fixed-DO system. The main reason for administering the fixed-DO system is because when these participants continue onto the aural syllabus, they could be required to use fixed-DO when they do the sight-singing component. Due to the nature of the fixed-DO syllables, participants were also introduced to 'si' for G-sharp and 'le' for A-flat for the relating keys of A major-F# minor and Eb major-C minor (See Appendix B).

In the last 10 minutes of the sixth session, participants were asked to pitch and sing the intervals of perfect octave and Major 7<sup>th</sup> as learned in the lesson for the day. Firstly, they were required to sing the interval of a perfect octave using moveable-DO on any given note on the piano. After completing a round for the entire class, once again, they were required to sing, this time the interval of a Major 7<sup>th</sup> using moveable-DO on any given note on the piano.

g. Session Seven (Final Session / Post-Test)

The seventh and final session saw the introduction of the interval of augmented 4<sup>th</sup> or diminished 5<sup>th</sup>, also known as the tritone; as well as a revision of all the intervals learned before participants took the post-test. The themes to 'The Simpsons' during its opening credits, and 'Maria' from Broadway musical West Side Story were the only 2

suggested familiar melodies to identify the interval of a tritone. There were no further suggestions of familiar melodies of a tritone as the interval itself is rather obscure and is rarely used in a melody (See Appendix A).

For the exercise of pitching and singing the tritone interval, participants were told to use the solfège of so-ti-re-fa that is based on a dominant seventh chord ( $V^7$ ), as within the chord is a tritone. Participants were told to sing the dominant seventh chord in ascending motion of ‘so-ti-re-fa’ then, omit the root and 5<sup>th</sup> of the chord (so and re), thus pitching only ‘ti’ and ‘fa’, resulting in the singing of the melodic interval of a tritone (ti-fa). Participants were told of the two possible methods to identify and sing the tritone intervals. First is the reference to the familiar melodies and the other was in reference to the dominant seventh chord.

The reason of using a dominant seventh chord ( $V^7$ ) instead of a diminished chord is because the dominant of a key has a stronger pull in terms of harmony as opposed to a diminished chord. Participants were guided to hum the dominant from the given tonic (as they would have already learned how to pitch a perfect 5<sup>th</sup>), and then sing the outline of the remaining pitches of the  $V^7$  chord. This was a lot easier for them to get the tritone as oppose to using a diminished chord as a reference.

Participants were then given a set of sample exercises that included the intervals of tritone that were in the context of a dominant seventh outline. All sample exercises were in the treble clef and ranged from keys of up to 3 sharps and 3 flats. Participants were required to sing these sample exercises using the fixed-DO system. The main reason for administering the fixed-DO system is because when these participants continue onto the aural syllabus, they could be required to use fixed-DO when they do the sight-singing component. Due to the nature of the fixed-DO syllables, participants

were also introduced to 'si' for G-sharp and 'le' for A-flat for the relating keys of A major-F# minor and Eb major-C minor (See Appendix B).

In the next 10 minutes, participants were asked to pitch and sing the intervals of a tritone as learned in the lesson for the day. They were required to sing the interval of a tritone using moveable-DO on any given note on the piano. After that, they were required to sing intervals that were called out randomly of given pitches that were taught throughout the seven sessions. After completing a round for the entire class, we moved on to the posttest of twelve (12) questions that ranged between minor 2<sup>nd</sup> and perfect octave intervals. The results of the tests will be discussed in Chapter Four of this study.

## CHAPTER 4: RESULTS

Data was collected and analyzed from each participant's survey response and written test results. Results of the analysis of this study are based on the assumption that participants have not gone through any treatment prior to this study. The interval identification scores were collected from each participant as the primary source for data analysis. The investigator used the audio recordings of the seven sessions conducted during the treatment as a secondary source of data and to help resolve discrepancies between written and spoken responses. Following are the results presented with regard to each research question as well as analysis and explanation of the collected data.

### 4.1 Means, Standard Deviations, and Percentage of Means Improvement

Table 4.1 contains the means and standard deviations for the pre- and posttest scores of the controlled group, treatment group and all participants. It also displays the percentages of mean improvements.

**Table 4.1:** Means, Standard Deviations, and Percentage of Means Improvement

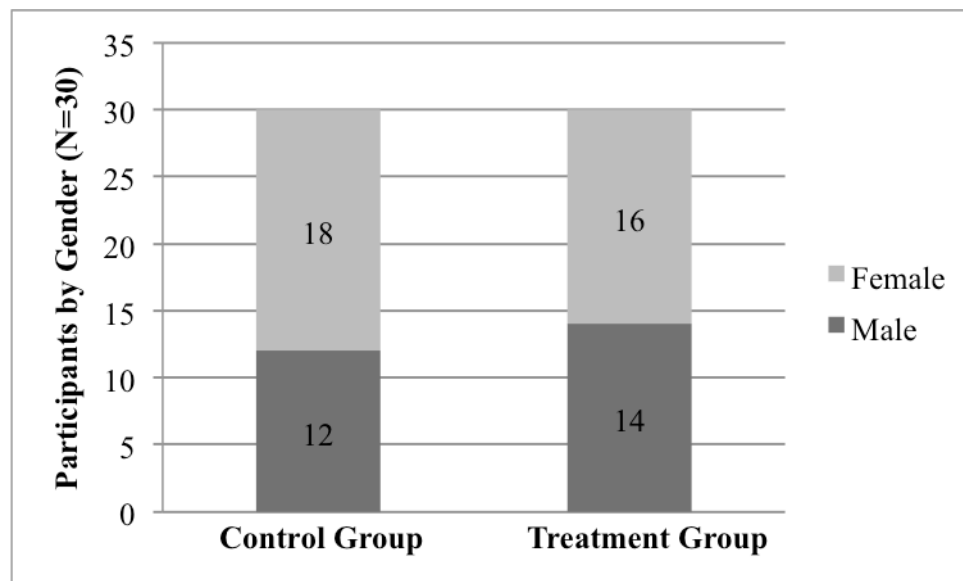
| Group                       | Pretest |      | Posttest |      | % of M. impr. |
|-----------------------------|---------|------|----------|------|---------------|
|                             | M       | SD   | M        | SD   |               |
| Controlled<br>n=30          | 7.83    | 2.69 | 9.83     | 2.83 | 20.35         |
| Treatment<br>n=30           | 7.7     | 3.04 | 10.33    | 2.47 | 25.46         |
| All<br>participants<br>n=60 | 7.77    | 2.85 | 10.08    | 2.64 | 23            |

Table 4.1 displays the improvement in mean scores between both groups as well as all participants as well as narrowing standard deviations between pre- and posttest for

the controlled and treatment group scores. A paired samples t-test revealed the difference between pre- and posttest means for all participants to be statistically significant ( $p = .005$ ). The treatment group showed a bigger percentage increase in mean score (25.46%) of both pre- and posttest. The control group showed a considerable percentage increase in the mean score (20.35%). With both groups combined, the mean score improved by 23% between pre- and posttest. The standard deviation for posttest of the treatment group showed a narrower margin while it showed a slightly wider margin for the control group.

#### 4.2 Demographics of Participants by Gender and Instrument Majors

Figure 4.1 shows the total number of participants by gender in both groups based on the demographic survey of this study.



**Figure 4.1:** Participants of both groups by gender

There is a greater significance in the control group whereby there is a difference of 6 participants who are female, compared to the treatment group which only has a difference of 2. It is evident that in this study, female participants were the dominant gender compared to the male gender.

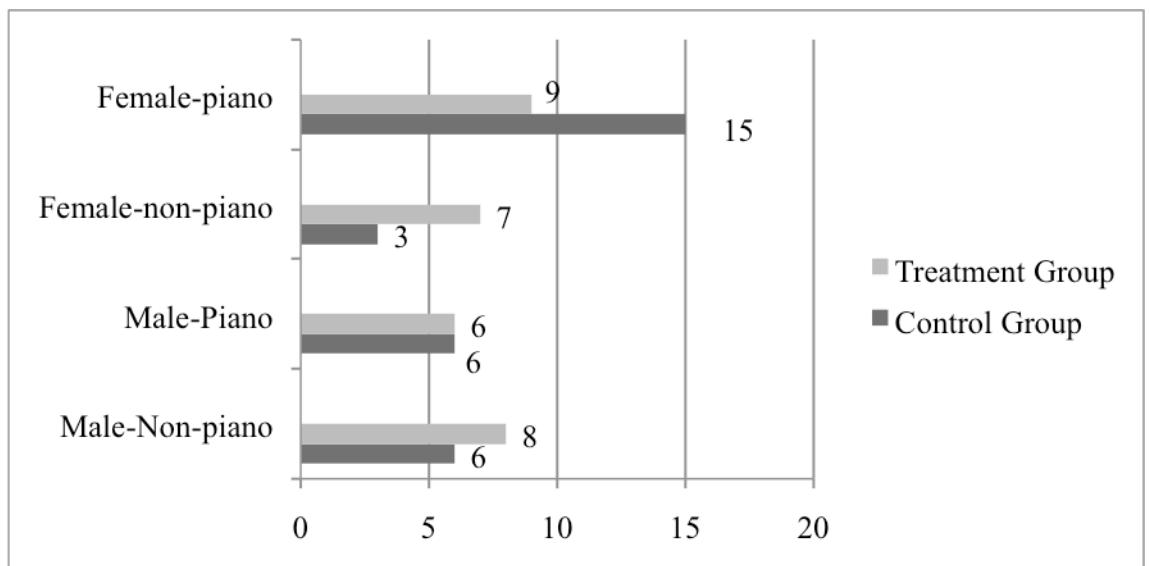


Table 4.2 presents the participants based on instrumental majors, as well as a breakdown of the non-piano instrumentalists in this study of both groups by gender.

**Table 4.2:** Participants based on instrumental majors and gender

| Instrument    | Control Group |        | Treatment Group |        |
|---------------|---------------|--------|-----------------|--------|
|               | Male          | Female | Male            | Female |
| Piano         | 6             | 15     | 6               | 9      |
| Drums         | 1             | 1      | 2               | -      |
| Violin        | 2             | 1      | -               | 2      |
| Guitar        | 2             | 1      | 2               | 1      |
| Voice         | -             | -      | 1               | 3      |
| Saxophone     | -             | -      | 3               | -      |
| Double bass   | -             | -      | -               | 1      |
| Electric bass | 1             | -      | -               | -      |

The variety of non-pianists in this study; namely drums, guitar, voice, violin, electric bass, double bass and saxophone, were a much smaller number in comparison with the majority of piano majors. In lieu of that, these instrumentalists have been grouped together in a ‘non-piano’ category in the pretest and posttest mean scores for both groups.

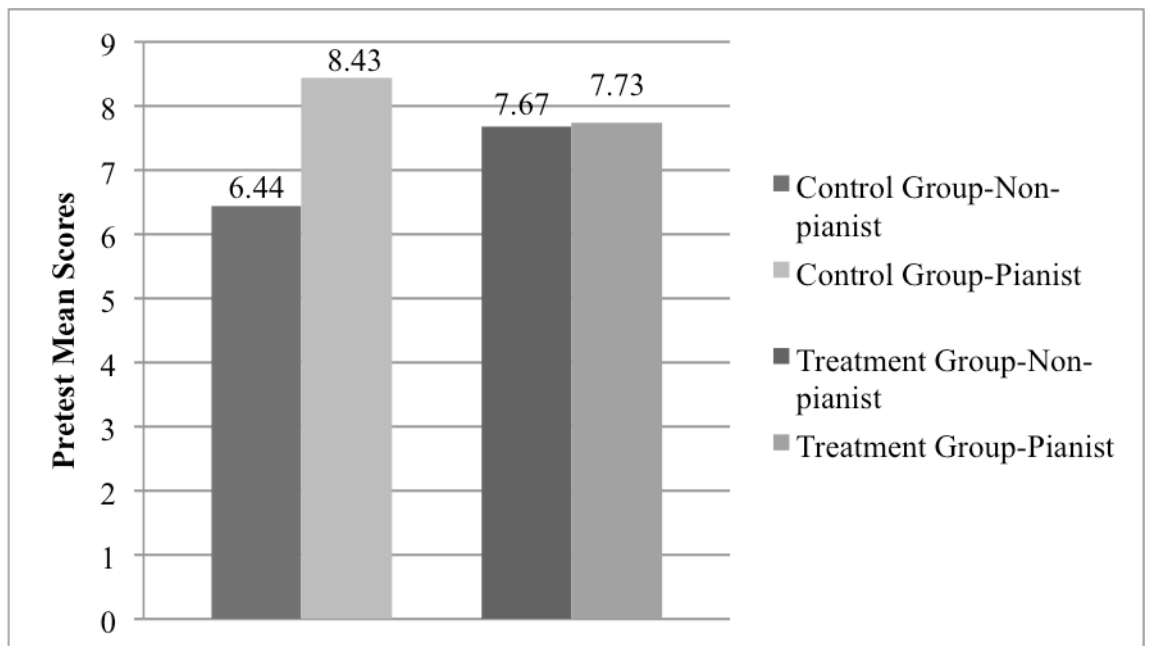


**Figure 4.2:** Participants according to gender and instrumental majors

Figure 4.2 illustrates the participants of both groups according to gender and instrumental majors. In general there were more female pianists compared to males for

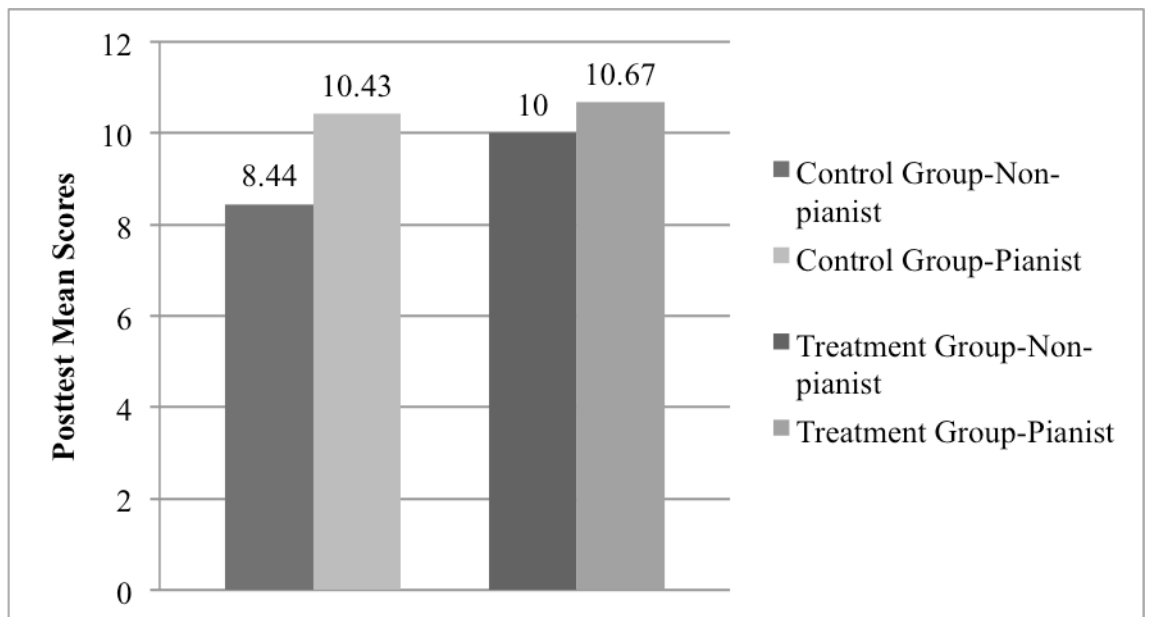
both groups, with a significant number in the control group who participated in this study. In contrast, there were more female non-pianists in the treatment group compared to the control group.

It was interesting to see the improvements by both groups according to these categorizations. Figures 4.3 and 4.4 show the pretest and posttest mean scores according to instruments for both groups.



**Figure 4.3:** Pretest Mean Scores according to groups and instrumental majors

Figure 4.3 shows the pretest mean scores according to groups and instrumental majors. The mean scores were significantly higher in the control group while there was only a slight difference in the treatment group. A question in the posttest was conducted to find out such difference in the pretest scores, which was a factor to such differences in the mean scores.



**Figure 4.4:** Posttest Mean Scores according to groups and instrumental majors

Although both groups showed a climb in the posttest scores, there is a significant improvement in the scores for treatment group of both categories as compared to the control group. This shows that the use of familiar melodies is a factor to improve interval identification. The table below shows the percentage of improvement in the mean scores between the four categories.

**Table 4.3:** Mean, Standard Deviation and Percentage of Means Improvement according to Instrumental Major

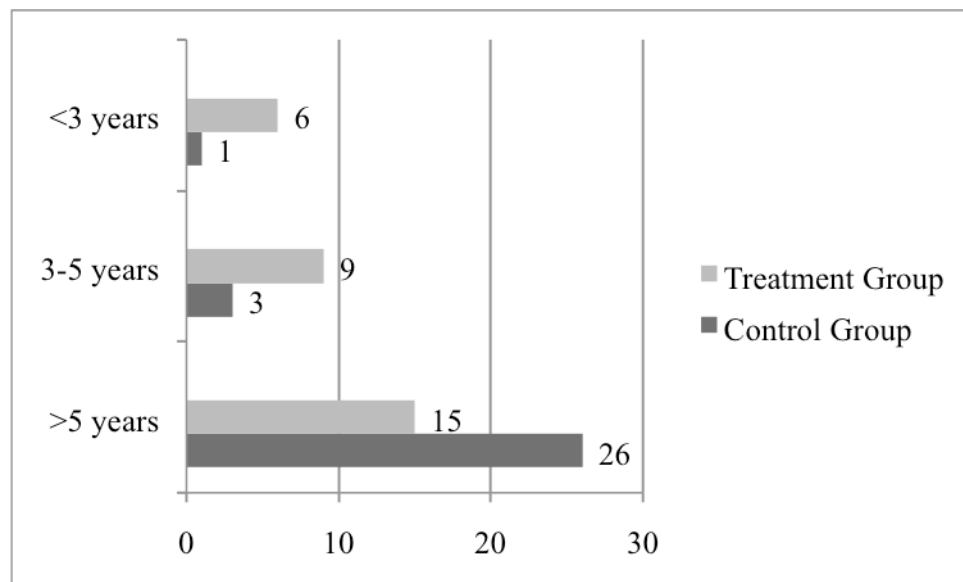
| Group     | Category  | Pretest |      | Posttest |      | % of M. impr. |
|-----------|-----------|---------|------|----------|------|---------------|
|           |           | M       | SD   | M        | SD   |               |
| Control   | Piano     | 8.43    | 2.16 | 10.43    | 1.91 | 19.18         |
|           | Non-piano | 6.44    | 3.4  | 8.44     | 4.1  | 23.7          |
| Treatment | Piano     | 7.73    | 3.37 | 10.67    | 1.59 | 27.55         |
|           | Non-piano | 7.67    | 2.8  | 10       | 3.14 | 23.3          |

The treatment group shows a greater improvement in its posttest scores. Table 4.3 shows an improvement in the percentage of the mean scores of the treatment group participants in the piano category (27.55%). The percentage of improvement in the

mean scores of the control group of the same category pales in comparison. This means the average score by the treatment group increased by 3 points and with the standard deviation of 1.59; this shows more students scored nearer to the average after the treatment. The purpose that these data were collected and analyzed was based on the hypotheses that participants with piano background will score higher as the majority of participants began their formal music training background on the piano, hence the familiarity of sound and timbre. This hypothesis is clearly disputed based on the marginal percentage of improvement in the mean scores of the control group of participants in the piano category (19.18%).

### 4.3 Demographics of Participants according to Years of Formal Music training

Figure 4.5 shows the number of participants according to formal years of music training for both groups.



**Figure 4.5:** Formal years of music training for both groups

It is evident that in this study, a majority of the participants have had more than 5 years of formal music training. These training included music lessons as well as theory lessons. The control group had more respondents that have more than 5 years of formal

music training as compared to the treatment group. Interestingly, the treatment group shows a balanced number of 15 participants who has more than 5 years of formal music training and another 15 who had less that 5 years of formal music training. These 15 participants are further divided into 3-5 years and less than 3 years of formal music training.

#### **4.4 Means, Standard Deviations, and Percentage of Means Improvement according to Years of Formal Music Training**

The table below looks at the mean scores, standard deviations and percentage of means improvement of both pre- and posttest according to the years of formal music training of all participants in both groups.

**Table 4.4:** Mean scores, standard deviations and percentage of means improvement for both pre- and posttest of both groups.

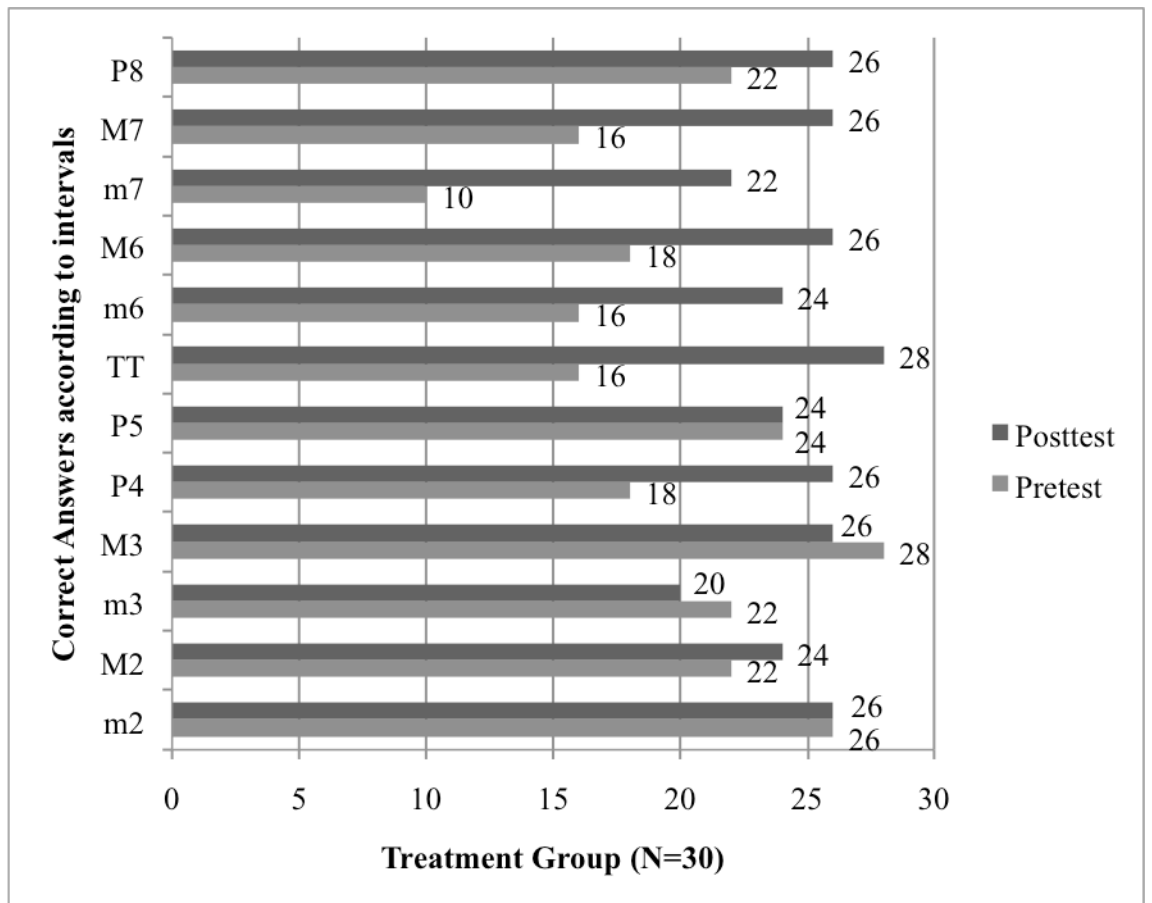
| Group           | Category          | Pretest |      | Posttest |      | % of M. impr. |
|-----------------|-------------------|---------|------|----------|------|---------------|
|                 |                   | M       | SD   | M        | SD   |               |
| Control Group   | More than 5 years | 7.8     | 2.77 | 9.73     | 2.97 | 19.84         |
| Treatment Group |                   | 8.67    | 2.66 | 11.13    | 1.24 | 22.11         |
| Control Group   | 3-5 years         | 7.33    | 2.52 | 10.33    | 2.08 | 29.05         |
| Treatment Group |                   | 7.56    | 2.45 | 10.4     | 1.81 | 27.31         |
| Control Group   | Less than 3 years | 10      | ---  | 11       | ---  | 9.1           |
| Treatment Group |                   | 5.5     | 3.94 | 8.17     | 4.26 | 32.68         |

Table 4.4 displays the improvement in mean scores between both groups in their categories as well as narrowing standard deviations between pre- and posttest for the

control and treatment groups. The average score for those who had more than 5 years of formal music training, the treatment group scored higher in the posttest scores with the standard deviation of 1.24. This shows more students scored nearer to the average after the treatment. The control group had a slight dip in its average score as well as standard deviation. This means that slightly more students scored further from the average at posttest. A paired-samples t-test revealed the difference between pre- and posttest means for the treatment group having less than 3 years of formal music training to be significant ( $p = .286$ ). The treatment group with less than 3 years of formal music training demonstrated the greatest percentage increases in mean score (32.86%) between the pre- and posttest; however this was not a statistically significant difference from the control group's percentage increase in mean score. It was not possible to have a difference in the standard deviation between both groups of less than 3 years of formal music training due to the sole participant in the control group.

#### **4.5 Means, Standard Deviation and percentage of means improvement according to intervals**

The table below looks at the mean scores, standard deviations and percentage of means improvement of both pre- and posttest according to the number of interval identifications that were correctly answered in the treatment group.

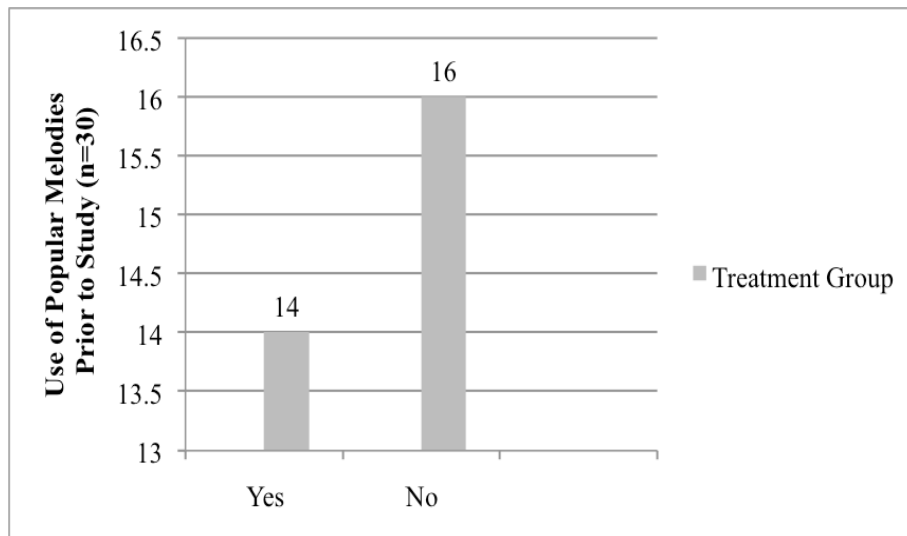


**Figure 4.6:** Correct Answers according to intervals for Treatment Group only

The data collected as shown in Figure 4.6 shows the number of correct answers in the pre-test and post-test of the treatment group. Although many intervals have slight increase in the number of correct answers in the post-test results, the intervals of minor 7<sup>th</sup> and tritone showed the largest increase of correct numbers in the post-test in the treatment group, whereby the difference is 12 participants. This is followed by major 7<sup>th</sup> with a difference of 10 participants, resulting as the second-largest increase of correct numbers in the post-test for the treatment group. Intervals of Major 6<sup>th</sup>, minor 6<sup>th</sup> and Perfect 4<sup>th</sup> saw the third-largest increase of correct numbers with a difference of 8 participants. Intervals of Major and minor 3<sup>rd</sup> saw a decrease of correct numbers with 2 participants scoring it incorrectly in the posttest, while intervals of Perfect 5<sup>th</sup> and minor 2<sup>nd</sup> saw no changes between the pre- and posttest results.

#### 4.6 Use of Familiar Melodies prior to Study

Participants for this study were based on random sampling. Therefore, there would have been a possibility that some of them would have heard or come across the method of using familiar melodies to identify intervals. Figure 4.7 shows the data collected from the demographic survey administered in the pretest.



**Figure 4.7:** Participants use of familiar melodies prior to the study

This data was gathered from the treatment group in the pre-test to find out if any of the participants have used the method of using familiar melodies to identify intervals prior to the treatment. The results show that 53% had never used familiar melodies to identify intervals while the remaining 47% has used it before.

The survey also included 2 posttest questions to determine the effectiveness of using familiar melodies to identify intervals and if the participants will continue to use the method.



**Table 4.5:** Effectiveness of using familiar melodies in interval identification and pitching (singing)

| <b>Post-test questions</b>   | <b>Yes</b> | <b>No</b> |
|--|------------|-----------|
| By using familiar melodies, it is easier to identify intervals   | 30         | 0         |
| I will continue to use familiar melodies to identify intervals as it helps me in pitching (singing) the correct interval | 30         | 0         |

This data was gathered from the treatment group only in the posttest on the participants' feedback on using familiar melodies to identify intervals. It is clear that all respondents agreed that it is easier to use familiar melodies to identify intervals. They also agree that by using familiar melodies to identify intervals, it helps them in their pitching or singing the correct interval. All participants in the treatment group agreed that it was easier to identify intervals by using familiar melodies. As a result, it also helps them in pitching (singing) the correct interval. Therefore, they will continue to use familiar melodies to identify intervals.

#### **4.7 Difference in response towards interval identification using familiar melodies**

Will there be a difference in the participants' response towards interval identification as a result of using familiar melodies to identify intervals?

The first question evaluates at the collected data of the difference in participants' response towards interval identification as a result of using familiar melodies to identify intervals. The analyses of the results are between the scores of both pre-test and post-test of both controlled and treatment groups. The result below compares the changes in test scores between the controlled group and the treatment group.

**Table 4.6:** Changes in test scores for both groups

| <b>Respondents Controlled Group</b> | <b>Pretest (Score 0-12)</b> | <b>Posttest (Score 0-12)</b> | <b>Changes between posttest-pretest results</b> | <b>Respondents Treatment Group</b> | <b>Pretest (Score 0-12)</b> | <b>Posttest (Score 0-12)</b> | <b>Changes between posttest-pretest results</b> |
|-------------------------------------|-----------------------------|------------------------------|---|------------------------------------|-----------------------------|------------------------------|---|
| Participant 1                       | 2                           | 0                            | -2  | Participant 1                      | 0                           | 9                            | 9   |
| Participant 2                       | 5                           | 12                           | 7   | Participant 2                      | 11                          | 12                           | 1   |
| Participant 3                       | 7                           | 10                           | 3   | Participant 3                      | 9                           | 11                           | 2   |
| Participant 4                       | 6                           | 8                            | 2   | Participant 4                      | 11                          | 12                           | 1   |
| Participant 5                       | 7                           | 9                            | 2   | Participant 5                      | 10                          | 12                           | 2   |
| Participant 6                       | 5                           | 8                            | 3   | Participant 6                      | 8                           | 12                           | 4   |
| Participant 7                       | 10                          | 11                           | 1   | Participant 7                      | 7                           | 9                            | 2   |
| Participant 8                       | 8                           | 12                           | 4   | Participant 8                      | 10                          | 12                           | 2   |
| Participant 9                       | 11                          | 11                           | 0   | Participant 9                      | 11                          | 12                           | 1   |
| Participant 10                      | 9                           | 12                           | 3   | Participant 10                     | 5                           | 9                            | 4   |
| Participant 11                      | 9                           | 11                           | 2   | Participant 11                     | 9                           | 12                           | 3   |
| Participant 12                      | 9                           | 9                            | 0   | Participant 12                     | 2                           | 8                            | 6   |
| Participant 13                      | 12                          | 12                           | 0   | Participant 13                     | 9                           | 9                            | 0   |
| Participant 14                      | 5                           | 11                           | 6   | Participant 14                     | 12                          | 11                           | -1  |
| Participant 15                      | 10                          | 11                           | 1   | Participant 15                     | 5                           | 0                            | -5  |
| Participant 16                      | 6                           | 11                           | 5   | Participant 16                     | 3                           | 9                            | 6   |
| Participant 17                      | 6                           | 11                           | 5   | Participant 17                     | 10                          | 12                           | 2   |
| Participant 18                      | 8                           | 8                            | 0   | Participant 18                     | 7                           | 11                           | 4   |
| Participant 19                      | 7                           | 12                           | 5   | Participant 19                     | 10                          | 12                           | 2   |
| Participant 20                      | 11                          | 5                            | -6  | Participant 20                     | 9                           | 11                           | 2   |
| Participant 21                      | 10                          | 12                           | 2   | Participant 21                     | 8                           | 12                           | 4   |
| Participant 22                      | 9                           | 12                           | 3   | Participant 22                     | 7                           | 10                           | 3   |
| Participant 23                      | 12                          | 5                            | -7  | Participant 23                     | 8                           | 12                           | 4   |
| Participant 24                      | 6                           | 11                           | 5   | Participant 24                     | 11                          | 12                           | 1   |
| Participant 25                      | 5                           | 8                            | 3   | Participant 25                     | 4                           | 10                           | 6   |
| Participant 26                      | 3                           | 6                            | 3   | Participant 26                     | 9                           | 12                           | 3   |
| Participant 27                      | 11                          | 11                           | 0   | Participant 27                     | 3                           | 8                            | 5   |
| Participant 28                      | 8                           | 12                           | 4   | Participant 28                     | 9                           | 11                           | 2   |
| Participant 29                      | 6                           | 12                           | 6   | Participant 29                     | 9                           | 11                           | 2   |
| Participant 30                      | 12                          | 12                           | 0   | Participant 30                     | 5                           | 7                            | 2   |

The findings of the calculations are listed in Table 4.6. The highest attainable score for the correct intervals was three; the highest attainable score for the incorrect intervals was five. The average of interval identification scores of the changes for each sample after the treatment within the treatment group was calculated. The most improved in score for the treatment group is 9 while for the controlled group is 7.

The first comparison made was the total number of participants who improved their scores after the treatment and the total number of participants who improved their scores without the treatment. 27 improved their scores with treatment and 21 improved their scores without treatment. Although the difference is relatively small, the numbers could be wider if the number of samples were larger. This is shown in the highlighted scores in Table 4.6.

The next comparison was the number of points that changed in the majority of participants that improved higher than the average points of within groups. Within the treatment group, 3 is the average points, and out of the 27 participants, 10 improved their scores, which was more than the average points. In the controlled group, the average point is 3.5, and out of the 21 participants, 9 improved their scores more than the average. However, because of the small sample size, a large difference will not be seen but it does not mean that it is not significant. Contributing factors that could have externally affected the results will be discussed in the final chapter of this study.

#### **4.8 Accuracy of interval identification using familiar melodies**

How accurate will the identification of intervals be as a result of using familiar melodies to identify intervals?

The second research question examined the results of accuracy of interval identification using familiar melodies. A two-sample z-test was used to calculate the accuracy.

**Table 4.7:** Two-sample z-test of accuracy of interval identification

| <b>Treatment Group</b>              |                |                 |
|-------------------------------------|----------------|-----------------|
|                                     | <b>Pretest</b> | <b>Posttest</b> |
| <i>Mean</i>                         | 7.7            | 10.3            |
| <i>Variance</i>                     | 9.25           | 6.09            |
| <i>Sample size</i>                  | 30             | 30              |
| <hr/>                               |                |                 |
| <i>p-level</i>                      | 0.05           |                 |
| <i>Hypothesized Mean Difference</i> | 6.             |                 |
| <i>Standard Error</i>               | 1.41           |                 |

The calculations of these are based on the post-test scores of the treatment group with their pre-test scores. In this study, the correct number of identified intervals within the treatment group determined the accuracy of identified intervals. A two-sample z-test was used to calculate the confidence level and standard error. The hypothesis that there will be an improvement in interval identification using familiar melodies was with a mean difference of 6 points ( $p=0.05$ ). The standard error generated was 1.41 whereby there are other variables that cannot be controlled that may result in inaccuracies. These variables are external factors such as frequency of individual practice in identifying intervals using familiar melodies and pressures of answering test questions, which result in incorrect answer.

**Table 4.8:** Mean, Standard deviation and percentage of mean improvement of treatment group

| <b>Group</b>      | <b>Pretest</b> |           | <b>Posttest</b> |           | <b>% of M. impr.</b> |
|-------------------|----------------|-----------|-----------------|-----------|----------------------|
|                   | <b>M</b>       | <b>SD</b> | <b>M</b>        | <b>SD</b> |                      |
| Treatment<br>n=30 | 7.7            | 3.04      | 10.33           | 2.47      | 25.46                |

Pre-test scores shows the average accuracy is 7 points, while post test score shows the average accuracy is 10.3. Therefore, accuracy of intervals is higher by 3 points

after the treatment and that identifying intervals using familiar melodies improve the test scores of the samples. As seen in Table 4.8, the treatment group charted the highest percentage of mean improvement (25.46%) as compared to the control group (20.35%) and a combined average of both control and treatment groups (23%) seen in Table 4.1 on page 51.

There is a 75% probability that external factors could have contributed to the improvement of identifying intervals using familiar melodies. However, this percentage when broken down into many more independent variables such as frequency of individual practice, using external methods to identify intervals and others would be significantly lesser than the 25.46% charted by the improvement of identifying intervals using familiar melodies. Therefore, there is a greater accuracy in identifying intervals by using familiar melodies as proven in this study.

#### **4.9 Difference between treatment and control group in posttest results**

Will participants of the treatment group differ significantly from the control group after experiencing the use of familiar melodies to identify intervals in facilitating dictation?

The purpose of the final research question is to investigate the impact in post-test scores between both controlled and treatment groups. The question looks for the significance of results of the treatment group, after experiencing the use of familiar melodies to identify intervals in comparison with the controlled group, without the treatment. The ANOVA test was used to determine the significance of this study. Based on the results of both groups, the ANOVA test shows the following:

**Table 4.9:** ANOVA test of the changes between posttest and pretest results

| Analysis of Variance (One-Way) |             |     |      |          |         |        |
|--------------------------------|-------------|-----|------|----------|---------|--------|
| Summary                        |             |     |      |          |         |        |
| Groups                         | Sample size | Sum | Mean | Variance |         |        |
| Treatment                      | 30          | 79. | 2.63 | 6.30     |         |        |
| Control                        | 30          | 60. | 2.   | 10.14    |         |        |
| ANOVA                          |             |     |      |          |         |        |
| Source of Variation            | SS          | df  | MS   | F        | p-level | F crit |
| Between Groups                 | 6.02        | 1   | 6.02 | 0.73     | 0.4     | 4.00   |
| Within Groups                  | 476.97      | 58  | 8.22 |          |         |        |
| Total                          | 482.98      | 59  |      |          |         |        |

Out of the overall, other factors excluding treatment could have influence the results, as shown in the ANOVA test of Within Groups. The MS (average sum of square) of Between Groups shows that treatment is a main factor in helping interval identification accurately. As the numbers shown in SS, treatment is not an important factor that affected participants' results. By comparing the results for treatment and other factors influencing participants' results, the ratio is shown in the F column, of which is based on the MS of the Between Groups and Within Groups. The ratio of 0.7 means that there is a 41% chance that treatment is a factor, while 59% are other factors that have influenced the result of this study. Since F is 0.73, which is smaller than the F-critical, which is 4.00, we can conclude that a variant in participants' results due to treatment is smaller than the variants in results due to other factors. Therefore, based on the statistical results, the treatment conducted is not an important factor in determining the participants' results. However, looking at the overall improvement made by the treatment group, it is obvious that the treatment is effective in identifying intervals using familiar melodies.

## CHAPTER 5: DISCUSSION AND CONCLUSION

The purpose of this study was to investigate the accuracy of interval identification using familiar melodies by undergraduate music majors. Following were the research questions of this study:

1. Will there be a difference in the participants' response towards interval identification as a result of using familiar melodies to identify intervals?
2. How accurate will the identification of intervals be as a result of using familiar melodies to identify intervals?
3. Will participants of the treatment group differ significantly from the control group after experiencing the use of familiar melodies to identify intervals in facilitating dictation?

### 5.1 Discussion

In this study of identifying intervals using familiar melodies in undergraduate participants, the sample size was relatively small, which resulted in a low significance towards the results of the study. However, based on the frequency of meeting the participants' for the treatment, which was twice a week, there are many other factors that could have affected the results of this study. These external factors include the frequency of independent practice done by the participants themselves out of the weekly treatment sessions. Prior to the end of every weekly session, participants were advised to practice singing the intervals using the solfège system, and also identify the intervals of the first two notes in the melodies of their favorite songs or songs played on radio, out of the weekly contact hours of the treatment. The purpose of this practice was to reinforce and enhance the effectiveness of the interval identification. This

suggested exercise could be one of the external factors that affected the overall result of this study.

Base on the pre-test demographic study, some participants have noted that they have not undergone any formal music theory studies. This means that they have yet gone through the topics of intervals in music theory studies, hence not understanding the concept of intervals, have lesser or no ability to visualize the distance of the pitches, which are essentially the definition of intervals (Grove, 2014). This could be an external factor to the overall result of the study. Other external factors include psychological factors such as test anxieties, mentally unprepared for a pop quiz, personal factors such as over-confident of the participant which led to careless errors during the tests or even lack of confidence in answering the questions correctly (i.e.: second-guessing their answers) that could have been the cause of the results of the treatment to be less significant than it should have been. If these external factors were less than 40% individually by its categories or components, the treatment would be significant in this study as identifying intervals using familiar melodies alone shows a significance of 40% in the results.

An important result from this study can further expand as to whether the different combined external factors are indeed a contribution to the results of this study. Although in question 3, it is proven that the variable is not significant, but there are obvious differences from the results of question 1 and question 2.

## **5.2 Future Research**

Although age and years of experience was not assessed in this study, it could be expanded further. The methodology used in this study could be prolonged to see if with age and formal years in music training would further establish the effectiveness of



this study of using familiar melodies to identify intervals in their entire 3-year degree program. One possible explanation for the no improvement or weaker results could be attributed to the frequency of independent practice. For many undergraduate musicians, becoming successful in learning to play an instrument is a possible result of listening and performing experiences with guidance from the institution and lecturer. One-on-one instruction aids in developing the skills necessary to become an independent musician. These results appear to be consistent with previous research that supports the idea that age and years of experience do not seem to have any relationship on interval identification success when dictating melodies. (Talbert, 2012)

Further studies that can be done are on categorizing the various genres or styles of music that could affect the relation of the melodies to identify intervals. It could be tied in to the accuracy of the intervals in melodic dictation. The accuracy of interval identification by using music examples that are unknown to the participants could also be a study to be explored. An interesting area to investigate is the different instrument timbres that could affect the accuracy of identifying intervals and melodic dictation. This comes from an experience where some string players find it difficult to dictate melodies that are played on the piano, but have no trouble dictating when the melody is played on the violin. This can also tie in with students who began their formal music education as a non-pianist to investigate if indeed instrument timbre has an effect on the aural skills of musicians.

The familiar melodies used in this study were from a wide range of selected genres and styles. Further research that could be done can include a more skewed selection that is based on the different genres (contemporary majors using classical melodies, and vice versa). Studies can also be done as to the familiarity of the styles according to the majors (classical majors using classical melodies) to identify intervals. The

influence to conduct a possible study on this is based on an article on the preferences of classical and pop in music education (Walker, 2005).

Another area to further develop this study is to investigate a more effective way for harmonic interval identification and dictation. While identifying melodic intervals could be simpler as it is 2 pitches played separately one after another; harmonic intervals pose a different challenge whereby the listener will need to identify the interval of two pitches played simultaneously.

Staunch believers of both fixed and moveable Do systems will claim that their solfège method is more effective. Therefore, another area of possible further studies includes the study of identifying intervals accurately using different solfège systems. The direction of intervals could also be studied as ascending and descending intervals pose different identification challenges to its listener (Wasserman, 1974).

This study has met its objective in investigating the efficacy of using the first two pitches of familiar melodies to identify all melodic intervals within an octave. Although the treatment worked, the margin and merit of results were small probably due to the small sample size and period of treatment. Further improvement to this study can be made with a different sample size and a different period of treatment. Being able to control certain external factors such as separating the different formal music backgrounds and using different solfège systems could give more defined results to the area of aural skills. Nevertheless, the treatment further emphasized the method of using familiar melodies to recognize melodic intervals, and in the long term, aid in dictating melodies.

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## APPENDIX

### Appendix A: Examples of Familiar Melodies used in this study

#### Session ONE – Major and minor 3<sup>rd</sup>

- minor 3<sup>rd</sup> – Theme to Shanghai Beach

Musical score for 'Theme to Shanghai Beach' in 4/4 time. The melody is in the treble clef. The first measure shows a minor 3rd interval between G4 and Bb4, circled in red. Chords Am and G are indicated above the staff.

- minor 3<sup>rd</sup> – Greensleeves

Musical score for 'Greensleeves' in 6/8 time. The melody is in the treble clef. The first measure shows a minor 3rd interval between G4 and Bb4, circled in red. Chords Am, G, and Em are indicated above the staff.

- Major 3<sup>rd</sup> – When the Saints Go Marching In

Musical score for 'When the Saints Go Marching In' in C major, 2/4 time. The melody is in the treble clef. The first measure shows a major 3rd interval between C4 and E4, circled in red.

- Major 3<sup>rd</sup> – 'Spring' from *The Four Seasons* by Vivaldi

Musical score for 'Spring' from *The Four Seasons* by Vivaldi in 3/4 time. The melody is in the treble clef. The first measure shows a major 3rd interval between C4 and E4, circled in red. The tempo is marked Allegro.

#### SESSION TWO – Major and minor 2<sup>nd</sup>

- minor 2<sup>nd</sup> – *Für Elise* by Beethoven

Musical score for 'Für Elise' by Beethoven in 3/8 time. The melody is in the treble clef. The first measure shows a minor 2nd interval between C4 and B3, circled in red. The tempo is marked Poco moto and the dynamics are pp.

- minor 2<sup>nd</sup> – *The Entertainer* by Scott Joplin

Musical score for 'The Entertainer' by Scott Joplin in 2/4 time. The melody is in the treble clef. The first measure shows a minor 2nd interval between C4 and B3, circled in red. The tempo is marked Not fast and the dynamics are f. A second system of the score is shown below, starting at measure 5.

- Major 2<sup>nd</sup> – Frere Jacques (Are You Sleeping?)

Frere Jacques, Frere Jacques, Dormez vous? Dormez vous?  
Are you sleep-ing? Are you sleep-ing? Bro-ther John, Bro-ther John,

- Major 2<sup>nd</sup> – Selamat Hari Raya (as sung by Saloma)

Se - la - mat ai - di - fi - tri

### SESSION THREE – Perfect 4<sup>th</sup> and 5<sup>th</sup>

- Perfect 4<sup>th</sup> – Someday My Prince Will Come from *Snow White and the Seven Dwarfs*

(A) Eb D7(9#) EbMaj7 G7(9#)

- Perfect 5<sup>th</sup> – My Favorite Things from *The Sound of Music*

**MY FAVORITE THINGS** – RICHARD ROSS

E-7 F#-7 E-7 F#-7 Cm7

- Perfect 5<sup>th</sup> – Can't Help Falling in Love from *Lilo & Stitch*. Original by Elvis Presley

Wise men say —

### SESSION FOUR – Major 6<sup>th</sup> and 7<sup>th</sup>

- Major 6<sup>th</sup> – My Way (as sung by Frank Sinatra)

And now the end is near,

- Major 6<sup>th</sup> – My Bonnie

My Bon-nie lies o-ver the o-cean,

- Major 7<sup>th</sup> – Don't Know Why by Norah Jones

...ant - ed till I saw

SESSION FIVE – minor 6<sup>th</sup> and 7<sup>th</sup>

- minor 6<sup>th</sup> – Black Orpheus by Luis Bonfa

- minor 6<sup>th</sup> – Theme from Love Story

When do I be-gin  
With her first hel-lo,

- minor 7<sup>th</sup> – Kiss Goodbye by Wang Lee Hom

- minor 7<sup>th</sup> – Watermelon Man by Herbie Hancock

SESSION SIX – Perfect octave

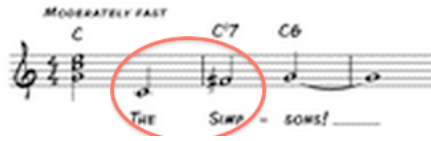
- Somewhere Over the Rainbow from *The Wizard of Oz*

Some - where o - ver the rain bow way up high  
Some - where o - ver the rain bow skys are blue

- Blue Bossa

SESSION SEVEN – Tritone (augmented 4<sup>th</sup>)

- Opening theme of The Simpsons

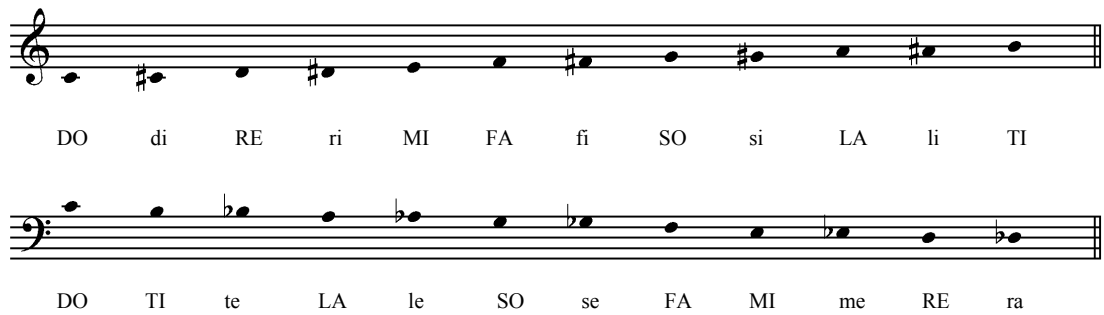


- 'Maria' from *West Side Story* by Leonard Bernstein



Appendix B: Solfège Table & Key Signature table of up to 3 sharps and 3 flats

Solfège Table



Key Signature Table

|  |                    |  |                    |
|--|--------------------|--|--------------------|
|  | C major / a minor  |  | C major / a minor  |
|  | G major / e minor  |  | F major / d minor  |
|  | D major / b minor  |  | Bb major / g minor |
|  | A major / f# minor |  | Eb major / c minor |

## Appendix C: Questionnaire & Test Questions

- Test Questions

Explanation: Questions were administered according to the numbers. Intervals were played melodically (bottom note first, then top note) on a piano. Intervals were played once, with 30-second intervals in-between each question.

**Section A: Identify the following intervals. Each interval will be played once. (12pts)**

|          |           |
|----------|-----------|
| 1. _____ | 7. _____  |
| 2. _____ | 8. _____  |
| 3. _____ | 9. _____  |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ | 12. _____ |

- Test Answers

Each correct answer is 1 point.

1. Major 3rd

2. minor 6th

3. Perfect 4th

4. Perfect 5th

5. minor 3rd

6. Major 2nd

7. minor 2nd

8. Major 6th

9. minor 7th

10. Perfect 8th

11. Major 7th

12. Tritone

- Respondent profiles were Part 2 and 3 of the questionnaire.

## PART TWO: PROFILE OF RESPONDENTS

- 2.1 What is your applied major instrument? Please select from the list provided below:
- (a) Piano –  (b) Piano –  (c) Voice –   
 Classical Contemporary Classical  
 (d) Voice –  (e) Guitar – Classical  (f) Guitar –   
 Contemporary Contemporary  
 (g) Drums  (h) Violin – Classical  (i) Violin –   
 Contemporary  
 (j) Others, please specify: \_\_\_\_\_

- 2.2 What is your gender: (a) Male  (b) Female

2.3 Age:

- (a) 17 – 20  (b) 21 – 24  (c) 25 and above

- 2.4 Which (a) SF131 Practical Skills 1  (b) SF132 Practical Skills 2   
 aural course are  
 you currently  
 enrolled in?

**PART THREE: MUSIC EDUCATION BACKGROUND** This section intends to establish understandings of the music background participants have.

3.1 How many years have you had formal music training?

- (a) Less than 2 years  (b) 2-3 years  (c) 3-5 years  (d) More than 5 years   
 (e) None

3.2 Tick the applicable examination board in which you had formal music training.

- (a) YAMAHA  (b) TRINITY  (c) ABRSM  (d) Self-trained / Learn-by-ear (Go to 2.5)   
 (e) Others: \_\_\_\_\_  
 (f) If Yes, please specify completed grade: \_\_\_\_\_

3.3 Does your teacher conduct exercises of the aural component for the examinations?

- (a) YES  (b) NO

3.4 How often does your teacher conduct exercises of the aural component for the examinations?

- (a) Weekly  (b) Fortnightly  (c) Once a month  (d) Less than 5 times before the exam date



3.5 Have you had formal music theory training?

- (a) YES  (b) NO   
(c) If Yes, please specify examination board: \_\_\_\_\_  
(d) If Yes, please specify completed grade: \_\_\_\_\_

3.6 Have you been taught to identify intervals using familiar melodies?

- (a) YES  (b) NO

- Part 4 was included in the posttest for treatment group

This section aims to understand participants' thoughts on using familiar melodies to identify intervals.

4.1 By using familiar melodies, it is easier to identify intervals.

- (a) YES  (b) NO

4.2 I will continue to use familiar melodies to identify intervals as it helps me in pitching (singing) the correct interval.

- (a) YES  (b) NO