The Effect of Educational Material on Public Perception of "The Iso Principle" and Its Use in Music Therapy

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THE EFFECT OF EDUCATIONAL MATERIAL
ON PUBLIC PERCEPTION OF “THE ISO PRINCIPLE” AND ITS USE
IN MUSIC THERAPY

By

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ABSTRACT

The purpose of this research was to expose the potential deficits that exist in the standard music therapy practice- specifically involving the “Iso Principle.” The study also serves to gauge the perceptual views of those who are not familiar with music therapy as they learn the theoretical constructs. A demographic questionnaire and series of statements regarding the Iso Principle were presented to 97 adults both before and after an educational presentation on the use of Iso Principle in Hospice settings. Each participant marked the degree to which they believed the statement to be true in his or her subjective experience on a scaled differential, which was then statistically evaluated. The results were indicated 93.75% of the completed survey responses had an increase in numerical score from pre-test to post-test with 100% of the total post-test responses on the positive side of the differential spectrum.
CHAPTER 1

INTRODUCTION

As far back as ancient Greece, music has been recognized as having a remarkable source of influence on the human spirit. (Monk, 2012). Despite its often anecdotal nature, evidence suggests that mankind has never allowed itself to disregard music as simply entertainment. For example, during the Renaissance, when medical advancement first began to favor scientific study over medieval mysticism; the search to include music in the treatment of others remained a constant (Monk, 2012). Today, music therapy is defined as “clinical and evidence-based use of music interventions to accomplish individualized goals for people of all ages and ability levels within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program.” (AMTA, 2016) In other words, scientific research, reproducible results, and a well trained professional are the hallmarks of music therapy.

One of the core intervention models of music therapy is the Iso principle (Bonde, 2002). Though not exclusively a mechanism for music therapy, it still holds a crucial role in its practice. In the following review of scientific research, the efficacy of both music therapy and the Iso Principle, will be analyzed.

Review of Literature

The exact origins of the ‘Iso Principle’ in music are relatively unknown as it has existed as an aspect of musical performance since the very beginnings of musical expression. The word “iso,” or equal in Greek, has a brief and finite history, having only been used to describe this therapeutic phenomenological discovery since the early half of the twentieth century (Donald, 2012). The psychiatrist Ira Maximilian Altshuler, the first to explore the use of Iso in psychiatric practice, explained that, “‘Iso’ simply means ‘equal’; that is, that the mood or tempo of the music in the beginning must be in ‘iso’ relation with the mood or tempo of the mental patient” (Altshuler, 2001). This is in reference to Altshuler’s many experiments in Eloise, Michigan during the early 1940’s where he attempted to use music rather than the prevailing practice of hydro-therapy (Altshuler, 1941). These experiments were later referenced and replicated by Harry Murdock and Merrill Eaton in 1952. Murdock and Eaton also further investigated the
benefit of music by coupling music listening with electroshock treatments in a psychiatric setting. (Murdock, 1952).

Penelope Gouk, a historian of early medical practices describes Altshuler’s experimentations in an article titled Objective Science or Just a Metaphor? for the Nordic Journal of Music therapy. She writes,

“When Altshuler added listening to music to the daily regimen of four schizophrenic patients who had failed to respond to hydrotherapy, the results were striking. First, all patients responded favourably to music, in that their ‘output’ decreased; and second, these effects seemed to be the same whether they had received hydrotherapy or not. As Altshuler observed, ‘This . . . raises the question as to the rationale of our generally accepted hydriatric procedures (p. 279).’” (Gouk, 2001, p. 67).

What Altshuler understood about music was its uncanny ability to entrain its surroundings into its rhythm or emotional attributes. Since his time, this principle has been at the forefront of standard music therapy practice, and continues to be one of its most prolific aspects.

Altshuler himself was not a music therapist, however (Donald, 2012). Yet, during his medical career he made advances toward the clinical and evidence-based use of music in medicine. Altshuler’s theory was that music could be used to reflect a patient and in doing so, the patient would simultaneously reflect the music, which could then be adapted and controlled. “In other words, there is a sympathy, or 'resonance' created between the patient and therapist that is mediated through the bodies of instruments and their bodies as instruments” (Gouk, 2001, p. 67).

Medical communities have repeatedly observed and tested the benefits of music therapy and its fundamental Iso principle,

“If music were to be accepted by the medical profession as a useful addition to their therapeutic armoury, its beneficial effects had to be demonstrated scientifically. Although there was clearly support for using music in hospitals, especially for returning war veterans, the scientific community demanded proper assessment and evaluation procedures.”(Gouk, 2001, pp 65-66).

Since Altshuler’s studies, researchers have experimented with music therapy and the use of “Iso” in a variety of ways. In a 1977 dissertation Roger Perry analyzed the efficacy of music’s mood changing properties on 168 adolescent girls. Perry tested both the Iso Principle (which he refers to as “Iso/Vector”) and a lesser-known model known as the Mood-Dissonant approach.
Specifically, this approach involved the creation of an EEG wave test chart of a patient’s calm and relaxed state. Once the chart was completed, a Music Therapist would then transfer the chart into musical sound using a vibrometer and tonal meter. This newly created music could then act as a sedative for anxiety. Though interesting in concept, the use of the Mood-Dissonant approach was not found to be statistically significant in comparison to Iso or random music (Perry, 1977).

One of the key components of the Iso Principle is its totality in what is being “met” by the therapist. Altshuler cites “iso-moodic” when referring to the adjustment of mood, but leaves room for those that follow in his footsteps to apply Iso to any aspect of a person that may need adjusting (Donald, 2012). The James-Lange Theory of emotion asserts that there is a connection between one’s emotional affect and one’s physiological symptoms (Coleman, 2011). According to this theory, a physical body might enter into a fight-or-flight response as a reaction to an external stimulus. In doing so the mind perceives distress and the mood is altered.

The Cannon-Bard Theory of emotion directly contradicts this, however, and states that the mind first perceives the emotional distress and then as a result, the body reacts with physiological symptoms (Cannon, 1927). But, when processing the two alternating theories with the Iso principle in mind, one can assume that if music can be adapted to meet the patient’s current emotional or physiological state, then one could potentially adjust both to provide assistance with improving either aspect of the patient’s condition. Accordingly, this use of “Iso” can be seen throughout many recent music therapy and music medicine experiments.

One interesting variable in which music therapy can have a strong effect is the body’s pulse and oxygen saturation rates. In 1995, Linda Chlan measured the use of music therapy on the heart rate and rhythm, respiratory rate, systolic and diastolic blood pressure, oxygen saturation, and airway pressure on ten mechanically ventilated patients. In comparison to the control, ten patients that received no music, the subjects demonstrated significant reduction in both heart and respiratory rates (Chlan, 1995).

This effect has even been scientifically reproduced in infant studies. In 2002, Jayne Standley wrote a meta-analysis regarding the efficacy of music therapy for premature infants. In this review, Standley affirmed what a number of previous studies invoking neo-natal music therapy reported: music therapy can significantly improve the oxygen saturation of premature infants. Additionally, a study conducted in 1995 by Standley and Moore further demonstrated
that infants exposed to the sound of sung lullabies had significantly fewer occurrences of Oximeter alarms than did infants listening to their own mothers' voices reading (Standley, 2002).

The notion that music can be used to assist in the reduction of stress and anxiety has since been tested in a variety of medical and non-medical settings. In 1989, for example, Michael Thaut observed the self-perceived changes in emotional states of 130 prisoners before and after a 3-month music therapy treatment model. Areas of focus included relaxation, mood and emotion, and thought and insight in the psychiatric prisoner-patients. Subsequently, “[r]esults showed a significant change \( (p < .05) \) in self-perceived ratings across all scales comparing before versus after music therapy.” (Thaut, 1989, p.155).

In 2007 Jaclyn Palmer further tested music’s ability to provide relaxation. Palmer’s experiment consisted of a population of 86 women with breast cancer whom received music therapy prior to their surgeries. Using a one-way ANOVA statistical test, Palmer found a significant decrease in anxiety from the use of both live and recorded music as compared with standard procedures (Palmer, 2007). This same effect was reproduced in 2010 when Amy Madson and Michael Silverman supplied 56 organ transplant patients with 15-35 minute live music therapy sessions. The results of this experiment indicated significant gains in patient self-report levels of relaxation. Additionally, it is reported that all patients expressed a desired interest in receiving future music therapy interventions (Madson & Silverman, 2010).

In addition to waking relaxation, music has been shown to assist with relaxation during sleep. In 2004 the Taiwanese researcher Hiu-Ling Lai measured the effects of recorded music on the sleep patterns of 30 subjects between the ages of 65 and 83. The subjects were measured with the Pittsburgh Sleep Quality Index prior to the study and at weekly intervals throughout the three-week timeframe. Lai concluded from the data collected that those who received music therapy had “better perceived sleep quality, longer sleep duration, greater sleep efficiency, shorter sleep latency, less sleep disturbance, and less daytime dysfunction \( (p = .04 \text{ to } .001) \)” (Lai, 2004, p. xiv).

Notably, one specific population, end of life patients, requires music therapy in each of the previously addressed domains. Russell Hilliard explains in a Journal of Palliative Care article from 2001 that Hospice patients often suffer from a multitude of symptoms including pain, grief, anxiety, communication disorder, and reality orientation (Hilliard, 2001). He goes on to assert that the use of music therapy can be quite effective in treating all of these areas given its
nature. Hilliard’s hypothesis has since inspired a growing number of music therapy services in the Hospice setting, with the Iso Principle being within the top three commonly used intervention. (Wolverton, 2012).

Lee Ying also conducted an analysis of music therapy practices for non-cancer Hospice patients in 2011. In this investigation, the medical records of 120 deceased patients were examined, half of which were receiving music therapy services. Goals were addressed primarily in the domains of emotional and social with goals of physical, physiological, and cognitive needs being met to a lesser extent (Ying, 2011). Though not statistically significant, Ying’s data indicate “subjects in the music therapy group (M= 89.23, SD= 162.12) on average lived 46 days longer on hospice than those who did not receive music therapy (M= 43.07, SD= 102.69).” (Ying, 2011, p. 37).

Given the goals and needs of Hospice patients, there is a strong demand for useful and beneficial therapeutic interventions. However, despite this need, only 26% of the nursing homes and 37% of the assisted living facilities surveyed in 2013 provided music therapy services. (Greco, 2013). This disparity could be due, in part, to a lingering sense that music therapy is still anecdotal mysticism left over from centuries past.

Even within medical communities, where music therapy is conducted to the fullest extent by AMTA standards, there remains a lack of understanding as to what can be defined as music therapy. A survey conducted by Kathleen Humphries measured the perceptions of oncology nurses about to music therapy. According to 246 members of the Oncology Nursing Society, “volunteer musicians are primary deliverers of music therapy (43.8%), followed by nurses identifying themselves as music therapy facilitators (29.5%)” (Humphries, 2013, pp. 5-6). Furthermore, Humphries’ data conclude, “[t]he majority of the respondents (68.2%) reported using music as a nursing intervention, with 80.9% providing music intervention via recorded music.” (Humphries, 2013, p. 24) While listening to recorded music could have some benefit, its fixed nature prevents it from being adapted by a Board-Certified Music Therapist trained in the Iso Principle and thus loses much of its utility. Correspondingly, this modality lacks the capability of providing specific therapeutic outcomes for individualized patient needs.

This lack of knowledge and understanding is not exclusively American either. A survey of staff nurses within the Neonatal Intensive Care Unit in Thailand expressed an overwhelming unfamiliarity with music therapy practices within the setting. Specifically, 38.77% of the 66
nurses that participated held deep skepticisms towards the idea of music therapy in the NICU setting and 93.94% responded to the survey open-ended survey questions with questions of their own on the efficacy of the interventions. (Muens, 2011).

However, this perception could have more to do with the participants’ lack of direct exposure to true music therapy- rather than lack of awareness of the field itself. A survey conducted in 2013 by Alyssa Monas measured the perceptions of music therapy by other therapeutic disciplines, including pediatric physical therapists, occupational therapists, and speech-language pathologists. The respondents were broken into subsets based on their exposure to music therapy. Respondents’ submissions fell into three categories: (1) I have a music therapist working at my facility; (2) I have previously worked with a music therapist; (3) I have never worked with a music therapist (Monas, 2013). Results from the survey indicated that 100% of the therapists questioned that work at a facility with a Board-Certified Music Therapist also on staff believed the practice to be clinically effective. (Monas, 2013).

Similarly, a study conducted by Miriam Hillmer in 2007 gauged nurse perceptions of music therapy at a hospital that provided music therapy services to its patients. Out of 153 survey responses gathered, the mean scores for all but one statement reflected a 4.0 or higher rating on a 5 point Likert-type scale. (Hillmer, 2007). The one statement that did not indicate agreement towards music therapy services was “[a]ny patient is appropriate for music therapy services.” (Hillmer, 2007, p. 52). In addition, Hillmer points out in her discussion that this is indicative of a healthy referral process based on a patient’s clinical need for therapy rather than a patient’s desire to hear music.

Though the perception of music therapy within the current medical and therapeutic disciplines is very important, it is equally important to understand the views of those about to enter medicine. A survey of medical and nursing students conducted by Emily Grant in 2013 sought to find what current students knew about the field and whether or not they intended to work with Music Therapists in the future. Though the responses reflected a lack of understanding in regard to the value of the MT-BC credential and the training that it entails (only 29% of the 79 participants believed a Board Certified Music Therapist should conduct music therapy as opposed to a volunteer or uncertified musician), the data indicated that 85% of the respondents were familiar with music therapy in the medical setting. Additionally, the data revealed 75% of
participants believed it to be an effective treatment for a range of symptoms impacting the quality of life and 95% indicated a desire to add music therapy to their facility.

However, these surveys only go so far as to analyze the perceptions of music therapy as a practice, but rarely delve deeper into the specific intervention models, such as the Iso Principle. One study, conducted by Erica Privett in 2014, presented a 20-minute video consisting of two distinct Iso-principle interventions by a Music Therapist to graduate students studying either social work or music therapy to assess differences in perception involving its effectiveness. (Privett, 2014). The survey specifically asked participants to name interventions to the best of their abilities and only 27% of the Social Work students identified the interventions as “music therapy” versus the roughly 62.9% of the Music Therapy students identifying the interventions as “Iso-Principle.” (Privett, 2014).

With the Iso-Principle being such a core component of music therapy practice and the prevalence of music therapy services throughout the country, it is peculiar how little is known by the general public about this particular intervention. Perhaps with increased advocacy of the specific music therapy practices, knowledge and recognition of music therapy would spread even further. The aim of this research is to bring about increased awareness of the Iso Principle, as well as general music therapy practice, to the general populace. Presentations on the Iso principle and general music therapy practices were presented to participants of this study. To evaluate effectiveness the researcher administered a pre- and post-test survey to participants to determine whether there was a change in perception due to the information presented.
CHAPTER 2

METHODS

Participants

Subjects (n=97) were asked to participate in this study drawn from both the Florida State College of Music and the general public. The requirements for participation, as was outlined in the consent forms signed by each participant stated that volunteers who elected to participate must be eighteen or older for the purpose of gaining consent. No other criteria was sought out in the recruitment process.

Participants were asked to complete a brief demographic questionnaire prior to providing responses to the survey portion of the study. Fifty-one of the participants involved in the study were individuals who had self-identified as either students currently enrolled in a degree program outside of music or as persons not currently pursuing a degree. Forty-five of the participants had previously studied music. In addition, four participants had self-identified as having studied music therapy.

Procedures

The participants placed an “X” on a semantic differential scale that consisted of sixteen vertical lines as seen in Figure 1.

![Figure 1. Semantic Differential with Numeric Values](image)

Each of these lines were assigned numerical values (-8 through +8) that correlated to the degree with which the participant agreed with each statement. Each semantic differential provided a set of unique polarized descriptors at the right and left to help the participants provide responses accurately. These descriptors were mixed in the vocabulary used (“YES/NO,” “ALL THE TIME/NEVER,” etc.) and were intentionally randomized as to which side of the
differential had a positive statement and which had a negative. This randomization was used as an attempt to force the reader into taking extra time to think carefully before marking responses.

Participants were asked the following: “[p]lease read the following statements carefully and rate by placing an X on the line. Note that each statement is unique and may have different criterion for response” (Stewart, 2015). The statements below were presented with a semantic differential for each:

1. I am familiar with the Iso principle.
2. I am familiar with standard music therapy practices.
3. I understand the how iso-rhythmic music therapy can help breathing irregularities.
4. I understand how of iso-moodic music therapy can help anxiety.
5. I am interested in learning more of how the Iso principle can be used in music therapy.
6. I am interested in learning more about different populations that music therapy can work with.
7. I experience performance anxiety prior to important situations (i.e. job interview, public speaking, recitals).
8. I often times feel over stimulated by my surroundings (i.e. long hours in front of computers, television, video games).
9. I would consider the use of music therapy for personal wellness.
10. I would consider the use of music therapy as part of my treatment for any future applicable health circumstance.

Statements 1, 3, 4, 5, and 9 specifically referred to the Iso Principle, statements 2 and 10 were in relation to general music therapy practices, and statements 7 and 8 were control statements. The numerical values were created with the total summation of the recorded responses. Disagreement was indicated by a negative score and the specific numerical value indicated the level of disagreement. A positive score indicated the level of participant agreement to the statement. These were divided into pre- and post-test responses and then compared.

Following the demographic and pre-test portions, subjects were asked to listen to a fifteen-minute presentation on music therapy. The presentation, *Iso-Rhythmic Guitar for Dyspneic Issues*, (Stewart, 2015), was originally created as a Continuing Education Course for Hospice employees as part of an AMTA approved music therapy internship requirement. The presentation, originally designed to last between thirty and forty-five minutes, had three sections:
(1) Explanation of the Iso principle and brief overview of current research;
(2) Documentation and data collected from patient interactions; and
(3) Live musical demonstration of iso-rhythmic guitar playing.

For the purposes of the present study, the live demonstration was not provided.

**PowerPoint**

Participants were shown via a PowerPoint slide presentation the documentation notes of four specific patient visits, each demonstrating attempted music therapy interventions. Also displayed in this section, was a graphical representation of the patient’s oxygen saturation and pulse rate, both before and after the music therapy interventions, for ten consecutive visits (Figures 2 and 3).

![Oxygen Saturation Graph](image)

**Figure 2. Oxygen Saturation Graph**
After participants listened to the presentation, they were asked to continue on to the post-test section of the survey responses. The post-test contained the exact same ten statements presented as semantic differentials. This was to provide continuity between the pre- and post-test responses. However, the statements were reorganized in a randomized order. This new order was intended to prevent the reader from recalling previous marks on the pre-test from memory and replicating them on the post-test.

Of the ten statements, two of the statements, “I experience performance anxiety prior to important situations (i.e. job interview, public speaking, recitals),” and “I often times feel over stimulated by my surroundings (i.e. long hours in front of computers, television, video games),” were intended as “control statements.” Though the responses to these statements are relevant to the responses of other statements, such as “I would consider the use of music therapy as part of a
treatment plan for any future applicable health circumstance,” or “I would consider the use of iso principle for personal wellness,” the exact numerical answers to these statements were not expected to change, as the presentation presented no information involving this content.

After the demographic and survey responses were collected, a mean of the accumulated raw scores for all items was determined and resulted in a standard deviation of 3.52 per statement. This allowed for outlier data identification. Outlier data was analyzed specifically beyond the total summated raw scores and total accumulated percentage differences with the intention of finding any patterns by which this study may have affected some individuals’ responses more than others. These data was cross-referenced with the outlier’s individual demographic responses to assist the observer in determining any other causation for the scores recorded.
CHAPTER 3
RESULTS AND DISCUSSION

Results

Of the 97 surveys, 96 were returned completed. It was found that a total of 93.75% of the completed survey responses had an increase in numerical score from pre-test to post-test. It was also noted that 100% of the total summation of the post-test survey responses were on the positive side of the differential spectrum. The mean increase in total score submissions between pre- and post-test increased by 46.99%. The median score showed an increase in numerical value by 48.75%. The data had two modes, one of 47.50% increase in score and one of 52.50% increase in score. There were a total of four surveys out of the 96 post-test scores that did not indicate an increase in score. Of the four, only two responses had a decrease in numerical value.

Outliers

After analysis of the individual survey responses, eleven persons appeared to be outliers. Seven of these outliers showed a post-test total score two standard deviations below the raw-score mean and four showed a post-test total score two standard deviations above the mean. Within the aforementioned seven outliers, four displayed a decrease in score from pre-test to post-test, two displayed no difference between pre-test and post-test scores, and one displayed a marginal increase in score.

All four of the outliers presenting a decrease in score had identified as music majors, female, and displayed remarkably high pre-test scores, ranging from +45 to +65 out of a possible +80. While the post-test scores do indicate a decrease, it should be noted that overall the scores reflect agreement to the statements on both pre-test and post-test. Likewise, the responses indicate positive interest in both learning more about music therapy techniques and of the Iso principle.

The next set of outliers, two of which displayed no change in score and one of which displayed a slight increase in score, were also consistently positive in their collected survey responses. Of these three, two were female music majors (one having identified further as a music therapy major) with exceptionally high pre-test scores, ranging from +60 to +65. While
these two had slightly different scorings per statement, the overall responses indicated almost no change between the pre-test and post-test scores with end results of either +60 or +71.

However, the third participant from this grouping of outliers was quite different. Identifying himself as male and a student of French and English Literature in the demographic portion, this participant’s score was +24 and remained unchanged from pre-test to post-test. All statements were marked with extreme polarization (either -8, +8, or 0). The responses were consistently in the negative side of the differential spectrum for statements involving “understanding” and in the positive side of the differential spectrum for statements regarding “interest” in learning more about the material. This participant also marked 0 for the statement regarding overstimulation by surroundings on both pre-test and post-test.

The final group of outliers in this study included those who had scored two standard deviations above the raw-score mean in terms of increase in overall scorings. All four of these outliers were identified as college students between the ages of eighteen and twenty-four. Two identified as music majors (one further identified as being part of the Commercial Music program) and the other two had identified as pursuing degrees in either Accounting or Engineering.

The individual scores varied from person to person, but consistently showed negative alignments in pre-test responses involving current knowledge of music therapy or the Iso Principle. The scores also expressed neutral alignments towards the statements “I would consider the use of iso principle for personal wellness” and “I would consider the use of music therapy as part of a treatment plan for any future applicable health circumstance” (unanimously scoring of either a 0 or a +1 for both statements).

In the case of the outlier with the highest percentage gain from pre-test to post-test, all pre-test statements regarding music therapy were met with extreme negative alignments (a score of -8), the two statements regarding personal amounts of stress and overstimulation were scored at -4, and the two statements regarding personal decision to use music therapy or the Iso Principle had purely neutral alignments with a score of zero. This particular student had also self-identified as male and a student of accounting in the demographic portion of the survey responses. In his post-test scores, all statements regarding knowledge of music therapy or Iso Principle had increased by a minimum of 10 points on the scale. The neutral opinions had both increased by four points and the remaining statements regarding stress and overstimulation had
no change. In comparison to the other three outliers, only the statements regarding personal stress and overstimulation showed any substantial difference in scoring among the four.

Table 1 displays the mean of the total difference between the summation of pre- and post-test scores. Out of the ten statements, only one displayed a decrease in numerical value from total summation pre-test to post-test score. This statement, “I experience stress prior to important situations (i.e. job interview, public speaking, recitals),” had a decrease in the total mean value by .29. The statement with the highest percentage increase in score was “I am familiar with the Iso principle,” displayed an increase in total mean value by 8.84. While also having the largest increase in numerical value, it is also important to note that this particular statement had the lowest pre-test score of all ten statements.

The statement that contained the highest post-test score was “I would consider the use of music therapy as part of a treatment plan for any future applicable health circumstance.” Although the pre-test scores were not initially on the negative side of the differential spectrum, the total score still managed to increase across all participants by a collective mean of 1.73.

Discussion

Results of this study offer a two-fold analysis of the overall perception of music therapy. First, it is apparent that music therapy is still relatively unknown to the general public, which is represented by the overall summation of pre-test responses. Even when presented at a major university well known for its research in the field, there seems to be a general lack of awareness and misunderstanding of what the field has to offer.

While the pre-test scores also indicate that there is an interest in learning more about music therapy and an open-mindedness towards the idea of personally receiving music therapy under the appropriate circumstances, there is still a lack of understanding by which the process of music therapy works and in what specific areas of health care music therapy should be used. This is especially interesting since many of the survey responses were filled out by music therapy students.

Simultaneously, this study offers a more optimistic implication, which can be found in the post-test scores. Though the responses varied from one individual to the next, every post-test score displayed a positive alignment (+1 or higher) to all statements regarding understanding of music therapy techniques, the Iso-principle, and desire to learn more about what music therapy
can provide. Furthermore, the data demonstrate that those with the highest gains from the material were individuals with the strongest initial opposition to the statements in the pre-test scores. With 100% of the responses aligned on the positive side of each differential spectrum for statements regarding “interest” or “learning more,” it can be asserted that the general public might be more accepting of the addition of this treatment modality.

When analyzing specific scores of individuals, it is the outliers who draw the most attention from the researcher. In particular, the four outliers with the highest percentage gains from pre- to post-test demonstrate the advisability of continued studies such as this. With high markings in areas involving personal stress and overstimulation combined with openness towards music therapy techniques after learning of the potential benefits at a scientific level, these four individuals seem to evidence the expansion of music therapy advocacy and education. In addition, given the age of these individuals, music therapy could perhaps have an impact on their personal well-being in ways that other therapies and self-help techniques could not.

In the case of the one participant who did not display any change in score whatsoever, one might infer that this student might have aligned all answers with extreme polarized responses for simplicity of the process or ease in remembering previous responses when taking the post-test. However, even if that were true, the fact that the responses displayed +8 in response to statements such as “I would consider the use of music therapy as part of a treatment plan for any future applicable health circumstance” and “I would consider the use of iso principle for personal wellness” indicate how music therapy and the Iso Principle are perceived by someone who simultaneously admits to having no understanding of them (by scoring statements relating to understanding music therapy or iso principle at -8 consistently). This particular participant also aligned his response to the statement “I experience stress prior to important situations” at a +8 on both the pre-and post-test. This might demonstrate a desire to understand more about various therapeutic techniques and might possibly suggest that the subject would hope to further conduct research of his own about music therapy.

As for the outliers that displayed a decrease, it is interesting that both the pre- and post-test scores of these participants are well above the raw-score mean. The change in score, albeit nominal, could possibly reflect a sense of increased awareness in deficits of understanding the information. In the scores of the outlier whom had the largest decrease percentage, there were decreased scores on statements “I understand the use of iso-rhythmic music therapy can help
breathing irregularities” (from a pre-test score of +7 to a post-test score of +4) and “I understand how the use of iso-moodic music therapy can help reduce stress” (from a pre-score of +7 to a post-test of +5). Because all responses are still on the positive side of the semantic-differential spectrum, it can be assumed that this participant is now aware that there is more to be learned about specific music therapy interventions.

This particular survey response also displays high scores consistently from pre-test to post-test on all statements regarding personal use of music therapy and their interest in learning more about music therapy. It is very possible that this is not a reflection of a truly “decreased” opinion, but rather a newfound understanding that there is much left to be discovered about music therapy practices and of the Iso principle. Based on total survey responses, it is evident that more research is warranted to better understand the views and opinions the general public has towards music therapy.
### APPENDIX A

**DIFFERENCE OF TOTAL MEAN SURVEY RESPONSES BY STATEMENT**

<table>
<thead>
<tr>
<th>Statement Number and Type</th>
<th>Statement</th>
<th>Pre/Post Difference in Mean Score per Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ISO</td>
<td>I am familiar with the Iso principle.</td>
<td>+8.84</td>
</tr>
<tr>
<td>2. General MT</td>
<td>I am familiar with standard music therapy Practices.</td>
<td>+4.51</td>
</tr>
<tr>
<td>3. General MT</td>
<td>I am familiar with standard music therapy Practices.</td>
<td>+8.12</td>
</tr>
<tr>
<td>4. ISO</td>
<td>I understand how the use of iso-moodic music therapy can help reduce stress.</td>
<td>+8.11</td>
</tr>
<tr>
<td>5. ISO</td>
<td>I am interested in learning more about how the Iso principle can be used in music therapy.</td>
<td>+0.64</td>
</tr>
<tr>
<td>6. General MT</td>
<td>I am interested in learning more about the different procedures used by Music Therapists.</td>
<td>+1.48</td>
</tr>
<tr>
<td>Statement Number and Type</td>
<td>Statement</td>
<td>Pre/Post Difference in Mean Score per Statement</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>7. Control</td>
<td>I experience stress prior to important situations (i.e. job interview, public speaking, recitals)</td>
<td>-0.29</td>
</tr>
<tr>
<td>8. Control</td>
<td>I often feel over stimulated by my surroundings (i.e. long hours in front of computers, television, video games)</td>
<td>+0.57</td>
</tr>
<tr>
<td>9. ISO</td>
<td>I would consider the use of iso principle for personal wellness</td>
<td>+2.45</td>
</tr>
<tr>
<td>10. General MT</td>
<td>I would consider the use of music therapy as part of a treatment plan for any future applicable health circumstance.</td>
<td>+1.73</td>
</tr>
</tbody>
</table>
APPENDIX B

IRB APPROVAL

Office of the Vice President for Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 11/12/2015

To: Robert Stewart

Address: [redacted]

Dept.: MUSIC SCHOOL

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
The Effect of Educational Material on Public Perception of “The Isoprinciple” and its use in Music Therapy

The application that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be Expedited per 45 CFR § 46.110(7) and has been approved by an expedited review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 11/10/2016 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is IRB00000446.

Cc: Clifford Madsen Chair
HSC No. 2015.16353
APPENDIX C

SAMPLE CONSENT FORM

INFORMED CONSENT TO PARTICIPATION IN RESEARCH

The following is a voluntary consent form to participate in academic research. The purpose of this research is to show change, if any in awareness and/or public opinion toward the use of the “Iso-principle” in Music Therapy practice. You will be presented with a brief demographic and a pre-test survey to elicit your understanding prior to the presentation, followed by a brief educational presentation (lasting approximately 10-15 minutes) of current Music Therapy practices involving the “Iso-principle,” and a post-test survey. The questions will be answered confidentially should you choose to participate, and no personal information (such as name, email, phone number, etc.) will be recorded and/or published. The entire process should last no longer than 30 minutes.

Since your participation in this research involves no more than observing an educational presentation and strict confidentiality in your survey responses, you as the participant will be at no risk during the presentation, nor will you be identifiable at any point during the data analysis of the survey responses.

With the information gathered, both the awareness of the “Iso-principle” in therapeutic practice and the opinions towards it will be statistically measured to show the effectiveness of the educational material. The presentation portion of this research design might also allow you to identify ways in which you could incorporate basic Music Therapy principles and/or techniques, such as the "Iso-Principle," to your own life for personal wellness.

Should you have any questions regarding this research, please email Robert Stewart at [redacted] or his major professor, Dr. Clifford Madsen at [redacted]. Should you have any questions regarding the rights of Human Subjects in academic research, you may find more information with the FSU IRB at 2010 Levy Street, Research Building B, Suite 276, Tallahassee, FL 32306-2742, or 850-644-8633, or by email at humansubjects@fsu.edu.
If you are willing to participate in this research, please read the following statements and sign below:

I hereby give consent to use my responses to the information provided for academic research;

I grant this consent voluntarily subject only to the condition that I will not be identified by name in association with any of my work in any publications, conferences, or exhibits in which it may appear;

I understand that I may withdraw my consent, in writing, at any time. Should I withdraw my consent, any such work will not be further shown or used for any purposes, but will be retained until the work can be returned;

I understand that I will not be paid any fee or other considerations for participation in this research or for allowing said work to be shown/used for the above-stated purposes.

_________________________  ______________________
Name                        Date
REFERENCES


Ying, L. (2011). *A retrospective analysis of clinical and music therapy services for non-cancer patients receiving hospice care*. ProQuest
BIOGRAPHICAL SKETCH

Robert Stewart is a current student at the Florida State University pursuing a Master’s degree in Music Therapy. Robert earned his Bachelor’s degree from Florida Southern College in Music in 2013, where he received a performance scholarship for Guitar. He has also recently acquired his Board Certification in Music therapy. During his coursework at FSU, he worked with a variety of populations including recent veterans, at-risk youth, homeless individuals, and senior adults. Robert completed his AMTA approved internship with Trustbridge Health, Inc. where he served the Palm Beach and Broward Counties, providing patients receiving Hospice benefits Music therapy under the Supervision of Michelle Miller, MT-BC.