ACCEPTABILITY AND PRELIMINARY OUTCOMES OF BILINGUAL GUIDED
MEDITATION (BGM®) IN THE COLLEGE FOREIGN LANGUAGE CLASSROOM

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Abstract

Bilingual Guided Meditation (BGM®) is an innovative contemplative practice designed to reduce college students’ anxiety while learning a foreign language and to optimize foreign language learning in a relaxed and positive mindset. The BGM® program is novel in its combination of bilingual positive suggestion with the benefits of guided meditation and relaxing background music. This exploratory study evaluates the acceptability and preliminary outcomes of the BGM®. Participants were undergraduate Chinese language learners who practiced the BGM® as language class activities, compared with a control group, at a large, urban private university in the New England area. The study utilized a mixed methods approach. The outcomes of the BGM® were assessed by a quantitative method. Baseline and post-intervention anxiety levels regarding foreign language learning were compared within the BGM® group. Reduction of anxiety was significant (n=31, p = .000). A controlled trial was used to assess the anxiety reduction difference between the BGM® group and the control group as well. Results yielded significantly larger anxiety reduction with a modest effect size (n=60, p = .000, η² = .206) for the BGM® group compared to the control group. A controlled trial was also used to assess Chinese language skills at baseline and post-intervention. Results indicate significantly higher gains in Chinese language skills for the BGM® group compared to the control group (n=60, p =.048) with a weak effect size (η² = .067). The acceptability of the BGM® was investigated by a qualitative method using a semi-structured, open-ended questionnaire to gain students’ perspectives. Themes of student responses to the BGM® program included (a) greater relaxation and calmness; (b) stress/anxiety reduction; (c) more confidence in their Chinese class performance; (d) enhanced learning (pronunciation, speaking, and listening) and (e) enhanced concentration abilities in the Chinese classroom. Most students responded positively to the use of the BGM®
program, showing appreciation and encouraging the continuation of BGM® as part of their Chinese learning experience. Overall, students perceived the BGM® as a good way to create a relaxed learning environment and positive mindset. Findings suggest that the BGM® is acceptable to students, and that it has a positive impact on anxiety reduction and academic enhancement.

Keywords: Bilingual Guided Meditation (BGM®), Suggestopedia theory & practice, college Chinese learners, Foreign Language Classroom Anxiety Scale (FLCAS), foreign language academic performance, background music, positive suggestion, relaxation, bilingual input
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DEDICATION

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# Table of Contents

ABSTRACT ...................................................................................................................................................... 2

ACKNOWLEDGEMENTS ...................................................................................................................................... 4

DEDICATION .......................................................................................................................................................... 6

TABLE OF CONTENTS ......................................................................................................................................... 7

LIST OF FIGURES ................................................................................................................................................ 9

LIST OF TABLES .................................................................................................................................................. 10

CHAPTER I: INTRODUCTION .................................................................................................................................. 11

Statement of the Problem ........................................................................................................................................ 11

Purpose of the Study ............................................................................................................................................... 12

Significance of the Study ......................................................................................................................................... 13

Positionality .......................................................................................................................................................... 15

Research Questions ............................................................................................................................................... 16

Theoretical Framework: Suggestopedia Theory .................................................................................................... 17

Chapter Summary ................................................................................................................................................ 19

CHAPTER II: LITERATURE REVIEW .................................................................................................................... 21

Suggestopedia Theory and Meditation Practice ................................................................................................... 21

Different Models of Meditation ............................................................................................................................ 25

The Effects of Meditation Practice ....................................................................................................................... 28

Meditation, Hypnosis, and Suggestopedia .............................................................................................................. 32

The Potential Effects of Bilingual Guided Meditation (BGM®) ........................................................................... 38

Chapter Summary ................................................................................................................................................ 44

CHAPTER III: RESEARCH DESIGN ..................................................................................................................... 46

Research Questions ............................................................................................................................................... 47

Research Design .................................................................................................................................................. 49

Population and Sampling ..................................................................................................................................... 50

Data Collection .................................................................................................................................................... 52

Data Analysis: Choice of Statistical Techniques and Justification ...................................................................... 63

Validity, Reliability, and Generalizability ............................................................................................................. 69

Protection of Human Subjects ................................................................................................................................ 74

Chapter Summary ................................................................................................................................................ 75
List of Figures

Figure 2.1. Prescriptions for Implementing Pygmalion in the Performance/Training Context ..........................................................36
Figure 4.1. FLCAS Internal Consistency (Cronbach’s Alpha) ...........................................................................................................80
Figure 4.2. Normality/Skewness of Data Sets.................................................................................................................................81
Figure 4.3. Age Range...........................................................................................................................................................................82
Figure 4.4. Paired Samples T-test for the BGM® Groups......................................................................................................................84
Figure 4.5. Paired Samples T-Test for the Control Groups................................................................................................................85
Figure 4.6. Anxiety Reduction Comparison between Groups........................................................................................................85
Figure 4.7. ANCOVA on Anxiety Reduction........................................................................................................................................86
Figure 4.8. ANCOVA on Gender (Anxiety Reduction) ......................................................................................................................87
Figure 4.9. ANCOVA on Academic Performance Comparison........................................................................................................89
Figure 4.10. Comparison between BGM® and Control Groups on Pre and Post-Test Scores of Chinese Language Performance ..........................................................................................................................89
Figure 4.11. ANCOVA on Gender (Academic Achievement)............................................................................................................90
Figure 4.12. How Did You Feel after the Practice (Q1) .......................................................................................................................91
Figure 4.13. Effectiveness of Meditation on the Change of Mindset (Q2-Q3) ...................................................................................92
Figure 4.14. Concentration Enhancement in the Chinese Classroom....................................................................................................93
Figure 4.15. Effectiveness of Meditation in-and outside of Classroom Learning (Q5-Q8) .................................................................93
Figure 4.16. Most Favorite Element of the BGM® Program (Q9b) ........................................................................................................95
Figure 4.17. Most Favorite Version of the BGM® Program (Q10) ........................................................................................................95
Figure 5.1. Model of Current Potential BGM® effects .......................................................................................................................107
Figure 5.2. Model of Future Potential BGM® effects........................................................................................................................112
List of Tables

Table 2.1. Comparison of Hypnosis with Shamatha and Vipassana Meditation .................34
Table 3.1. Predictors in the Questionnaire ................................................................. 56
Table 3.2. Data Used in This Study.............................................................................62
Table 4.1. Experimental and Control Groups in Two Semesters ..............................82
Table 4.2. Language Backgrounds of Participants ....................................................83
Table 4.3. FLCAS Pre & Post Test Comparison (Paired Samples T-tests) .................84
Table 4.4. ANCOVA Tests of Academic Performance Comparison .....................88
Chapter I: Introduction

Statement of the Problem

When the world becomes more and more interconnected (Friedman, 2005), language becomes the bridge to understand and mediate different cultures, leading to a greater demand for effective language education. According to the most recent reports (Archer, 2013; Flaherty, 2015), college enrollment in Foreign Language programs in the United States has grown to more than 1.6 million. Enrollment in Chinese language programs in 2016 has also increased 18% compared to 2006. Chinese is one of seven most popular foreign languages to study among college students. In 2010, 670,000 language learners took the Chinese Proficiency Test.

However, high learning anxiety level has been identified as one of the major reasons for a large number of learners to give up studying a second language (Caliendo, 1990; Lonsdale, 2006).

In the past two decades, foreign language researchers and educators have increasingly focused their attention on foreign language anxiety as one of the most important affective predictors of foreign language achievement (Onwuegbuzie, Bailey & Daley, 2000; Zhao, 2008). Previous studies have also shown that foreign language learning anxiety has a negative impact on language skills acquisition (Brantmeier, 2005; Horwitz et al., 1986; Saito et al., 1999; Young, 1999; Zhang, 2002).

Concurrently, studies have also shown that meditation practices have significant effects on reducing stress/anxiety levels (Edwars, 1991; Miller, Fletcher & Kabat-Zinn, 1995; Shapiro & Walsh, 2003; Tate, 1994). Meditation is related to improved school grades, learning ability, and short- and long-term recall as well (Moore, 1992; Shapiro, Brown & Astin, 2011; So & Orme-Johnson, 2001; Schlesiger, 1996; Tloczynski & Tantriella, 1998), even though “a full-fledged
theory about the effects of meditation does not exist in Western psychology” yet (Sedlmeier et al, 2012, p. 1144).

In order to improve students’ learning of Chinese language through an innovative approach, Bilingual (English/Chinese) Guided Meditation (BGM®) practice has been incorporated into foreign language classroom settings at Northeastern University, an urban private university in the New England area. In the regular 14-week semester, Chinese language program offers a five-minute meditation, which is a 3 minute BGM® practice at the beginning of each class, and 2 minute BGM® practice at the end of class for beginner and intermediate Chinese undergraduate courses (see Appendix A & B: 3-minute & 2-minute BGM® scripts). This research aims to investigate whether the BGM® program as practiced and supported at this university reduces anxiety levels in foreign language learning, and ultimately increases foreign language achievement among college Chinese learners in the United States.

**Purpose of the Study**

Even though contemplative education including meditation practices has been gradually receiving mainstream acceptance all over the world as a valuable tool to induce an increased state of restful alertness (MaCown et al., 2011), empirical research into contemplative education remains in its infancy. Studies, with a control group, are pressingly needed to investigate whether the integration of contemplative technique with curriculum subjects enhances academic performance and general well-being (Miller, 2002; Albrecht et al., 2012). Researchers also strongly suggest that future research should prioritize the collection and evaluation of student classroom performance with contemplative intervention (Craig, 2011; Davis, 2010; Jha, 2005; Suttle, 2010). In order to enrich empirical literature, this study of BGM® is expected to provide
first-hand classroom data through a quasi-experimental assessment with a control group to increase external validity.

**Significance of the Study**

Recently, an increasing consensus is emerging that incorporates all human dimensions into learning and inquiry (Ferrer et al., 2010), as the meditation practice approach is also considered one of these alternative dimensions (Albrecht et al., 2012; MaCown et al., 2011). Even though several empirical researches indicated that regular meditation practice can improve academic achievement scores, graduation rates, and college acceptance for the at-risk students in the urban schools (Colbert, 2013; Nidich et al, 2011), the concept still awaits more investigation to evaluate that meditation practice reduces anxiety and enhances learning among American college students who learn Chinese as a foreign language.

Lozanov (1978, 2009), the founder of Suggestopedia, posited that a foreign language could be learned more quickly if students can relax and overcome their anxieties. Researchers have also evaluated and analyzed the positive effects of three essences of Suggestopedia, namely, music, relaxation, and positive suggestion (Bancroft, 1999; Dhority, 1991; Dhority & Jensen, 1998; Meng-Ching, 2000; Quast, 1999; Shimbo, 2008). Even though each factor contributes varying value, appropriate incorporation of all three variables into foreign language acquisition could very possibly generate positive results to reduce the anxiety levels and accelerate foreign language learning.

The BGM® program is novel in its combination of bilingually positive suggestion input with the benefits of guided relaxation meditation and soothing background music. In the process of meditation practice, students can easily enter the relaxation state which leads to restful alertness (McCown et al., 2011). Meanwhile, the soothing background music is intended to
enhance relaxation and activate the right brain hemisphere so that the left hemisphere will be relaxed to create optimal conditions for sustaining selective attention (Bancroft, 1999; Racle, 1979; Richards & Rodgers, 2001). Thus, simultaneous presentation of the bilingual suggestion and soothing background music during the meditation may enable the brain the call upon all its resources to assimilate new data (Racle, 1979). Activation of the right brain may also facilitate the learning of Chinese characters, which were developed from a pictographic writing system (Li, Nuttall, & Zhao, 1999). Under this kind of ideal learning environment, it is also possible for bilingual language input involving positive suggestion to have the subconscious effect of tapping into the reserved potentials (Lozanov, 2009; Matera, 1997; Storz, 1990).

An increasing number of schools are searching for innovative ways to meet the unique academic, social-emotional, and behavioral needs of students (Wisner, Jones & Gwin, 2010); therefore, this study is to investigate a potentially practical tool to assist educators in creating a nurturing learning environment, which enhances student academic performance and promotes varying degree of wellness outcomes in student populations. Moreover, besides being a psychological well-being intervention, the BGM® program could also be easily adapted by other language instructors into their curricula to enrich their course design.

Given the fact that few mainstream teachers and curriculum planners have explicitly integrated contemplative practices into the classroom (Hart, 2004), this research aims to provide new glimpses into the experiential, action-oriented, and empirical aspects of meditative practices into classroom setting. The results are expected to: (a) add to the literature on the efficacy of meditation in reducing academic anxiety levels and improving foreign language learning, (b) provide an example of application of the quasi experimental assessment model in an outcome study of innovative teaching, and (c) inform efforts to build more effective foreign language or
other compatible curricula from a holistic approach that optimizes students’ learning while nurturing their state of being as a whole person.

**Positionality**

Principally, I concur that all principles of education are based on certain aims and expectations (Kundu, 2009). According to the UNESCO report from the International Commission on Education (1996), education throughout life is based on four pillars: learning to know, learning to do, learning to live together, and learning to be. Formal education systems tend to emphasize the acquisition of knowledge to the detriment of other types of learning. However, it is vital now to conceive education in a more encompassing and integral fashion.

As an educator, I support integral education as I have been working on discovering how to help my students integrate their intellectual achievements with their personal well-being. I believe that it is a great challenge for all educators in the 21st century to contemplate how to apply innovative approaches into real classroom settings with appropriate assessment. My ultimate teaching goal is to build a nurturing learning environment for students to tap their stored reserves and develop holistically.

Moreover, according to Bell (2007), social justice and educational equity includes two important components: 1) equal distribution of resource, and 2) physical and psychological safety and security among all members. As a scholar practitioner and change agent, I also agree that one of the reasons for our students’ learning inefficiency is their psychological barriers to learning and fear that they will be unable to perform (Larsen-Freeman, 1986). How can educators help younger generations sustainably obtain the sense of safety and security not only physically, but also psychologically? In order to meet this challenge, I insist that teachers should
not only teach a language as a skill, but also play an important role in the course of nurturing students’ sense of well-being.

Furthermore, I believe that the integral approach is not just a new set of beliefs about teaching and learning, but also indicates new innovative ways of being in the classroom and reflects the goals of the educational process. I agree that it is necessary to activate the state of relaxation and alertness in order to stimulate hidden reserves of mind when presented with a large amount of language learning material. Therefore, I currently integrate both the advantages of Suggestopedia essences (music, relaxation and positive suggestion) proposed by Georgi Lozanov (1978, 2009) and meditation practice into my foreign language (Mandarin) curriculum design, implementation, and assessment.

Research Questions

This research attempts to examine the effects of the BGM® program on anxiety reduction and academic enhancement. This study recruited 60 undergraduate Chinese language learners from 2 beginner and 2 intermediate Chinese undergraduate courses in the 2016 Fall and the 2017 Spring semester respectively. In one half of the courses, students were assigned to the experimental group and the other half to the control group, which received the same Chinese language instruction without the 5 minute BGM® practice for one 14-week semester. The investigation of the BGM® practice includes pre & post test scores reflecting anxiety reduction and Chinese language achievement, students’ assessment of their anxiety, academic, and meditation experience, and researcher evaluation of the experimental outcome.

Overarching research question. What is the effect of the BGM® practice on foreign language classroom anxiety level and academic performance among Chinese learners in a large, urban private university in the United States?
**Sub-questions.** 1) What is the effect of BGM® practice on undergraduate Chinese language learners’ anxiety level? 2) What is the effect of BGM® practice on undergraduate Chinese language learners’ academic performance? 3) What are the perceptions of BGM® program among Chinese language learners?

**Primary directional hypotheses.** 1) BMG® practices reduce the stress levels of college students in learning a foreign language. 2) BGM® practices enhance foreign language learning performance.

**Theoretical Framework: Suggestopedia Theory**

The main theory used to test the hypotheses related to academic anxiety reduction and foreign language learning enhancement is the Suggestopedia theory, founded by Georgi Lozanov (1978, 2009).

Bailey, Onwuegbuzie & Daley (2000) summarized that: “in the past two decades, foreign language researchers and educators have increasingly focused their attention on foreign language anxiety as among the most important affective predictors of foreign language achievement” (p. 3). To alleviate foreign language learning anxiety, researchers proposed some suggestions, such as making the learning context less stressful and helping students to cope with the existing anxiety-provoking situation and implementing relaxation exercises for students to reduce anxiety stemming from personal factors, while giving more positive feedback for teachers to deal with anxiety stemming from role-related beliefs about teaching, etc. (Horwitz et al, 1986; Kitano, 2001; Saito & Samimy, 1996; Samimy & Tabuse, 1992; Young, 1999; Zhao, 2010).

Among a number of prevailing foreign language teaching/learning theories and methods, Suggestopedia / Reservopedia, the original version of SALT (Suggestive Accelerate Language Techniques) is referred to as one of the alternative humanistic theories and methods of foreign
language teaching. The theory and practice was developed by Bulgarian psychotherapist Georgi Lozanov (1978, 2009), who had made some remarkable improvements in language recall achieved after tapping the stored reserves of the students’ minds by unifying the conscious and unconscious. Researchers have also evaluated and analyzed the positive effects of the three essences of Suggestopedia: music, relaxation, and positive suggestion (Bancroft, 1999; Dhority, 1991; Dhority & Jensen, 1998; Meng-Ching, 2000; Quast, 1999; Shimbo, 2008).

Georgi Lozanov asserted that the reason for our language learning inefficiency is that “we set up psychological barriers to learning: we fear that we will be unable to perform, that we will be limited in our ability to learn” (Larsen-Freeman, 1986, p. 72). According to Lozanov (2009), we may only be using five to ten percent of mental capacity. In order to make better use of our mental reserves, we need to be de-suggested. Larsen-Fressman (1986) recommended Suggestopedia as the application of the study of positive suggestion to pedagogy.

Suggestopedia is a theory and method of educational dynamics, which focuses on the whole person. In doing so, it takes into account the conscious/unconscious duality of the student. While creating a state of psychological relaxation, it uses every possible suggestive interrelationship to overcome psychological resistance and to develop new mental behavior. The principal suggestive factors that can break down anti-suggestive barriers are prestige, authority, verbal and non-verbal levels in acts of communication, and the integration of the arts, especially music (Racle, 1979).

Fundamentally, the Suggestopedia theory is based on the idea that the acquisition of information can occur in states below the optimal level of consciousness. Suggestopedia presents lesson material by utilizing repetition, rhythm, and intonation as aids to memorization. Suggestopedia makes use of active concentration in a state of relaxed alertness (Bancroft, 1981).
Bancroft claims that the Suggestopedia system has very positive effects on the memory and wellbeing of students. Bancroft (1999) further elaborated that the SALT Method incorporates the basic elements of Suggestopedia as well as three principles: joy, absence of tension and concentrative psycho-relaxation; the unity of conscious and subconscious and integral brain activity; and lastly, the suggestive link on the level of the reserve complex. Suggestion is used “to tap into the normally unused reserves of the mind for increased learning” (p. 247).

In conclusion, Suggestopedia theory states that an important characteristic of a learning environment is one that minimizes anxiety and enhances personal security. Suggestopedia theory (Lozanov 1979, 2009) is founded on the principle that people are capable of learning more if their minds are free of anxiety. It is based on relaxation at a deep level and the use of baroque music to aid in learning (Williams & Burden, 1997). Even though each variable of three Suggestopedia essences (music, relaxation, and positive suggestion) contributes more or less value, the appropriate incorporation of all three factors into foreign language acquisition could possibly generate positive results to reduce the anxiety levels and accelerate foreign language learning based on research discussed above.

Chapter Summary

Lozanov’s Suggestopedia theory (1978, 2009) creates a type of holistic super learning which provides comprehensive input in a low-anxiety learning environment including baroque music. Suggestopedia theory not only provides the theoretical framework for this study, but offers the tools for analysis of the three essences of the Suggestopedia theoretical framework (music, relaxation, and positive suggestion) reducing anxiety and accelerating foreign language learning as well. The principle of the BGM® practice is based on the notion that these three variables could be appropriately integrated into this innovative program. While many
contemplative pedagogy practices in the classroom focus on creating an environment where students can learn the best, such as settling students moving from one lesson to another, quieting the mind, and assisting the class to achieve a peaceful state (Colbert, 2013; MaCown et al., 2011; Nidich et al., 2011), the BGM® practice uniquely integrates meditative techniques with the actual language material that needs to be learned, so that the students are gaining double benefits from one contemplative practice.

To sum up, because previous studies have shown that Suggestopedia theory and methods have positive effects on reducing stress levels and enhancing learning ability, this study aims to evaluate whether the BGM® program could have the advantage of all essences, both from Suggestopedia theory and meditation practice, to reduce stress levels and enhance learning ability in the course of mastering a foreign language.
Chapter II: Literature Review

The outline of this literature review is presented as the following. First, Suggestopedia theory and meditation practice are briefly introduced, Secondly, different models of meditation practice and their effects on stress reduction are described. Moreover, the literature that focuses on effects of meditation practice on learning, memory and other cognitive processes is investigated. Furthermore, the psychological principles of Suggestopedia theory, related to the meditation, Pygmalion effect, placebo and hypnosis are investigated. Finally, after introducing and evaluating the three major essences of Suggestopedia theory (music, relaxation and positive suggestion), the potential effects of bilingual guided meditation (BGM®) practice that incorporates the three essences are discussed.

Suggestopedia Theory and Meditation Practice

Many second language learners struggle, and experience significant anxiety while learning a new language. As a result, a large number of people give up before mastering the new language. According to Caliendo (1990), there is a large number of people who have attempted to learn/study second languages, but gave up the experience for two main reasons: “the opportunity for purposeful communication was limited,” and “the self-image of the learner was low and the anxiety level was rather high” (p. 1). Young (1991) proposed six potential sources of language learning anxiety: (a) personal and interpersonal anxieties, (b) learner beliefs about language learning, (c) instructor beliefs about language teaching, (d) instructor-learner interaction, (e) classroom procedures, and (f) language testing. Cheng (2012), investigated 156 Chinese graduate students’ language anxiety levels in a public university in the United States and argued that it was very common for Chinese graduate students to experience language anxiety in U.S. higher institutions.
It is paramount to reduce anxiety levels when students are in the process of learning a foreign language. Thus, Caliendo (1990) suggested that innovative methods are necessary to revitalize and refine our approach to language teaching. Bailey, Onwuegbuzie & Daley (1999) posited that: “in the past two decades, foreign language researchers and educators have increasingly focused their attention on foreign language anxiety as among the most important affective predictors of foreign language achievement” (p 3).

Among a number of prevailing foreign language-learning theories and methods, Suggestopedia / Reservopedia (Suggestopedia), the original version of SALT (Suggestive Accelerate Language Techniques), is referred to as one of the alternative humanistic theories and methods of foreign language teaching (Mateva, 1997). Sereda (1977) introduced this theory and method devised by the Bulgarian psychotherapist Georgi Lozanov, who achieved some remarkable improvements in language recall after tapping into the stored reserves of the students’ minds by unifying the conscious and unconscious (Storz, 1990). For example, the subjects were able to learn the rudiments of a foreign language (vocabulary and grammatical fluency for 2,000-3,000 words) within a month, while they were relaxed and experienced alpha brain waves for periods of up to two hours daily. Twenty UNESCO (United Nations Educational, Scientific and Cultural Organization) experts from different countries came to the following conclusions: “there is consensus that Suggestopedia is a generally superior teaching theory and method for many subjects and for many types of students, compared with traditional methods.” (Published in the USA: The Journal of the Society for Accelerative Learning and Teaching, volume 3, issue 3, Fall, 1978, p.211). The psychological principles and empirical evidences of Suggestopedia theory and practice are further investigated in the body of this literature review.
Recently, an increasing consensus emerged that incorporates all human dimensions into learning and inquiry (Ferrer et al., 2010). The meditation practice approach is considered one of these alternative humanistic dimensions. Wilber (1997) strongly valued Wallace’s 1970 landmark publication in Science (“The Physiological Effects of Transcendental Meditation”). Wallace’s research discovery “shocked the scientific world into recognizing that something real was happening in meditation” (p. 256). Wilber (2005) further suggested that the contemplative or meditative models should be given special attention since contemplative and meditative practices bring a life context of deep awareness that permeates and enriches practices in all other areas. Zajonc (2006) also introduced a study investigated by Richard Davidson and Mathieu Richard, indicating that meditation practitioners were able to induce sustained EEG gamma-band oscillations and phase synchrony during meditation sessions. These results were interpreted as supporting the view that attention and affective process can be trained via meditation practice. Since there are a number of variable meditation types available (Caspi & Burleson, 2005), the concept awaits more investigation to evaluate why and how meditation practice reduces stress level and enhances cognitive learning abilities. The importance of this type of investigation is nonetheless indisputable, similar to what Zajonc cited from the words of Charles Vest, president of MIT in September 2003: “there is no more profound or worthy subject of study than how we learn, remember, think, and communicate” (p. 241).

Generally speaking, the benefits of meditation, including stress reduction, calmness, perspective and insight, are becoming well known (Stein, 2003). Qualities such as inner calm, well-being, freedom from anxiety that are accessed in meditation gradually become present in everyday life. A simple meditation can indeed be a profound moment for students to build attention and support mental stability. However, it is not enough to just assume that qualities,
like the ability to manage academic stress, will develop automatically as a result of effort in objective knowledge acquisition (Barbezat & Pingree, 2012).

Meditation practice is also perceived as a means to self-regulation in Western psychology, whereas it is a means to transformed consciousness from Indian (Hindu & Buddhist) approaches (Sedlmeier, 2012). Kegan (2009) defined students’ development in transformational learning as a movement from the subject of one stage to the object of the next stage. Its characteristic of introspection makes meditation one of the easiest ways to fulfill this conscious development. When meditators are looking at the present subject with their awareness, they are making it an object and transcending it because meditation looks within (Wilber & Simon, 2009).

As Mateva (1997) argued, new techniques and creative insights could be only obtained when there is sufficient information and an accompanying positive attitude towards innovation. Thus, this literature review focuses on review and reflection of the sufficient information with both positive and critical attitudes. The purpose of this literature review is to determine whether guided meditation practice involving bilingually positive suggestion and relaxing background music can possibly reduce the stress level and enhance students’ learning ability. In order to verify this possibility, the three essences (music, relaxation, and positive suggestion) of the Suggestopedia theoretical framework, devised by the Bulgarian psychotherapist Georgi Lozanov, to accelerate foreign language learning are evaluated. The principle of the BGM® program design is based on the notion that these three essences (music, relaxation, and positive suggestion) can be appropriately integrated into the meditation practice. During the course of meditation practice, supplemental aids, such as relaxing background music and positive suggestions, are provided under the state of deep relaxation to “tap the stored reserves of human
being and unlock the potential of the mind that resides in the unconscious, such as accelerative learning, super memory as well as other hyper ability” (Storz, 1990, pp 6-7).

**Different Models of Meditation**

Wisner, Jones & Gwin (2010) discussed that an increasing number of school personnel are searching for innovative ways to meet the unique academic, social-emotional and behavioral needs of students. Some of these innovative approaches are to offer mindfulness meditation, relaxation meditation, and transcendental meditation among students.

Lind-Kyle (2009) also explained that the mind and brain could be trained through meditation. In her award-winning book (Best Books Award from 2010 USA Book News), she assisted the listener through different meditations designed to influence beta, alpha, theta and delta brain waves, moving the participant closer to brain synchrony and personal peace.

Sedlmeier et al. (2012) attempted to explain the impacts of meditation on cultivating mental balance and well-being, based on analysis of 163 empirical studies that concentrated on the effects of meditation. The authors summarized that there are three major types of meditation: mindfulness meditation, concentration meditation, and guided meditation. The authors gave definitions of three meditation practices as follows: 1) concentration meditation uses an object of focus or attention, which can be a mantra (mostly a spiritually meaningful word or phrase), one’s breathing, a picture, or a physical experience; 2) mindfulness meditation emphasizes on staying present in the moment and maintaining an alert, aware state in a nonjudgmental way; 3) the content of guided meditation is regarded as very important and is attended in a mindful way without analysis and judgment. The three types of meditation “appear quite distinct, but it is difficult to classify meditation as being exclusively of any one class” (p. 1141). In practice, there are different emphases on concentration, mindfulness, or guidance, but virtually all-meditative
practices involve a combination of the three approaches. Thus, the three major types of meditation do not differ in their overall effects.

Schoormans & Nyklíček (2011) further examined whether practitioners of two meditation types (mindfulness meditation and transcendental meditation) differ on self-reported mindfulness skills and psychological wellbeing. Their research results indicated that there were no evident differences between meditation types regarding mindfulness or wellbeing. They suggested the only variable predictor of both higher mindfulness and lower perceived stress is meditation frequency rather than any potential differences when comparing the two types of meditation.

Helber, Zook & Immerut (2012) also investigated whether students in a sociology course, which included contemplative practices, would show an increase in performance on higher-level cognitive abilities. Their data conclusion is similar to Schoormans & Nyklíček (2011), suggesting that the amount of time spent meditating is strongly related to the level of executive function improvement instead of the type of meditation practice itself.

Hoelzel (2011) defined mindfulness as the nonjudgmental awareness of experiences in the present moment that can produce beneficial effects on wellbeing and alleviate stress-related symptoms. With this definition, Kabat-Zinn & Salzberg (2003) introduced an eight-week stress reduction and relaxation program, consisting of several techniques, such as teaching body scan and introducing sitting meditation to expand the focus on an object. They ended the sitting meditation with a technique called choice-less awareness, which is a formless meditation with no object, just pure awareness. In addition, they also taught people to be mindful of their bodies, not just in stillness but also in motion, which “requires forms of meditation that involve moving with full awareness” (p. 127). After every eight-week stress reduction meditation program, there is a sharp reduction in the number of both medical symptoms and psychological symptoms such as
anxiety, measured by the Cognitive Somatic Anxiety questionnaire developed by Kabat-Zinn (p. 128). In follow-up studies of patients who took the meditation training, the number of symptoms remains low over the four years of the study.

Williams & Kabat-Zinn (2007) further discussed why usual attempts to "think" our way out of a bad mood or just "snap out of it" might lead individuals deeper into a downward spiral. They shared stories of individuals who have grown and changed by engaging in the mindfulness practices in the face of their histories of depression. They offered a systematic and easy-to-implement eight-week program for putting together all of the elements and practices described in the book in a practical way. Through the cultivation of mindfulness, negative thoughts are seen as mental events that are temporary and not permanent truths. Similarly, Begley (2007) analyzed how there are no more significant relations of the mental events occurring through the mind “…than a butterfly floating into your field of vision. Most crucially…the thoughts did not reflect reality” (p. 147).

Overall, meditation had been practiced in many forms and in many cultures over many centuries (Shapiro & Walsh, 2003). Different meditative techniques have overlapped and all may foster psychological and spiritual wellbeing. In addition, meditation also appears to produce improvements in aspects of “intelligence, school grades, learning ability, and short and long-term recall” (p. 89). Some of the research reports above have also shown that the positive effects are contributed by the length of meditation practice instead of the model of meditation practice, and even hypnosis shares similar effects in term of reaching the state of deep relaxation compared to meditation practice (Lynn et al., 2006). The detailed comparison between meditation and hypnosis will be later investigated in this chapter.
The Effects of Meditation Practice

Stress reduction. As mentioned above, Kabat-Zinn (1982) founded the Reduction and Relaxation Program to train chronic pain patients in self-regulation by practicing mindfulness meditation. He discovered that significant reductions in mood disturbance and psychiatric symptomatology and were relatively stable on follow-up accompanied these changes. Davidson et al. (2003) investigated the biological effects of mindfulness meditation. For the first time, the authors reported significant increases in left side anterior activation, a pattern previously associated with positive effect, among the meditators compared to the non-meditators. Brown & Ryan (2003) further provided a theoretical and empirical examination of the role of meditation in psychological wellbeing. Their study showed that the Mindful Attention Awareness Scale measured a unique quality of consciousness that is related to wellbeing constructions, which differentiated meditation practitioners from others. Based on many studies of mind/body medicine in the past 30 years, Kabat-Zinn (2005) summarized a possibility of coming to certain degree of peace within the body and mind, whereby find greater health, well-being, happiness, and clarity, even in the midst of great challenges and difficulties.

Lynn et al. (2006) proposed that meditation and hypnosis approaches could be used in tandem to create response sets and to de-automatize maladaptive response sets. Lynn also posited that meditation could serve as a template for generating an array of suggestions that provides cognitive strategies to contend with problems and to generally alleviate stress and negative thoughts.

Rosch (2007) indicated that a nonjudgmental form of meditation could also pacify mental disturbances. He concluded his paper with a case study of Peter Ralston, who won the World
Martial Arts Championship and revealed the progressive development of an expansive panoramic knowledge through the unbiased mind beyond fear and desire.

Edwards et al (2013) recorded an experience of a single session of an alpha theta meditation participated by small group of 10 participants (5 men and 5 women). Participants experienced various consciousness transformation themes including adjustment, relaxation, absorption, imagery, and being in the zone of concentration and transcendence. Their qualitative results are similar to those from other forms of relaxation and meditation research.

To sum up, over the past ten years, several hundred research studies have demonstrated numerous significant findings in psychological, physiological, and transpersonal realms, especially relating to the reduction of stress and anxiety levels (Shapiro & Walsh, 2003).

**Learning, memory and other cognitive enhancement.** In order to fulfill the demanding challenges and creative opportunities in today’s world, Sarath (2006) explored the role of contemplative practices within an emerging interdisciplinary referred to as creativity and consciousness studies. Meditation is presented as an essential first-person modality, which can help to develop qualities such as mental clarity, inner calmness, insight, compassion, and creativity. Therefore, it is crucial to introduce meditation into an academic setting.

Based on recent empirical research, Hoelzel (2011) indicated that meditation practice is associated with neuroplastic changes in the anterior cingulate cortex, insula, temporo-parietal junction fronto-limbic network, and default mode network structures. He suggested that meditation exerts its effects on the following aspects: attention regulation, body awareness, emotion regulation, and changes in perception on one self.

Hart (1999) compared the cumulative GPAs of the meditation group and control group at the baseline (Fall 94) and post-intervention (Spring 95). Fifty-six undergraduates who were
enrolled in an introduction to psychology course at Hampton University participated in the study. The participants were chosen from two classes of the same subject, and half of the participants in each class were assigned to the meditation and non-meditation groups. The meditation group was introduced to a simple meditation process that consisted of natural breathing techniques, relaxation and attention-focus techniques. This practice lasted ten minutes from start to finish while the amount of time spent studying in each group took one hour. The author found that college students introduced to an attention focusing and relaxation exercise for a semester had significantly higher GPAs in the following semester than a control group that had been matched for GPA but did not receive meditation training. The author summarized that the findings are consistent with the notion of state-dependent learning, which suggests that information is better retrieved in the physiologically or emotionally meditative state in which it was encoded and stored or learned (Rathus, 1997).

Mohan et al (2011) further studied the effects of meditation on stress-induced changes in cognitive functions. The 20-minute study consisting of practicing guided meditation and administration of psychological stress was conducted on 32 students who had never practiced meditation before. They discovered that practice of meditation produced a response of relaxation without taking away the beneficial effects of stress, namely, improved memory scores.

There is a growing body of research supporting the positive effects of meditation practice on cognitive and attention skills (Jha & Baime, 2007; Lazar, et al., 2005; Lutz, et al., 2009). The enhancement of the aforementioned skills can possibly improve school grades, learning ability, and long and short-term recall. However, we need more empirical investigation to prove that the possibility is due to meditation practice, as a psychological wellbeing intervention as well as academic performance enhancer.
In order to investigate why and how meditation practice can enhance the cognitive learning ability while reducing stress levels, Kozasa et al (2012) discussed that meditation is a mental training which involves attention and the ability to maintain focus on a particular object. In this study, the authors applied a specific attentional task to measure the performance of the participants with different levels of meditation experience, rather than evaluation of meditation practice per se. They evaluated the performance of regular meditators and non-meditators via an fMRI (function magnetic resonance imaging) adapted by Stroop Word-Color Task. The authors investigated why and how meditation practice can enhance the cognitive learning ability while reducing stress levels, resulting in a suggestion that meditation training improves efficiency, possibly via improvement of sustained attention and impulse control. van Leeuwen (2012) also measured EEG (electroencephalographic) activity to compare a group of eight highly trained Buddhist monks and nuns to a group of eight control monks and nuns of similar age and education, but with no prior meditation experience. The experimental result suggested that practicing meditation enhances the speed with which attention can be allocated and relocated, increasing the depth of information processing and reducing response latency.

In conclusion, studies have shown that meditation practice has positive effects on both stress level reduction and learning ability enhancement. Next, this literature review will further assess the potential effects of bilingual guided meditation, which appropriately incorporates the three essences (music, relaxation, and positive suggestion) of Suggestopedia theory and method into meditation practices in terms of mastering a foreign language. The literature on related psychological principles and phenomena of Suggestopedia, such as Pygmalion effect, hypnosis, and the placebo, will also be investigated.
Meditation, Hypnosis, and Suggestopedia

Similarities between guided relaxation meditation and hypnosis. Meditation and hypnosis are two psychological processes that have fascinated scientists, healers, and the general public for centuries (Rosen, 2006). Rosen posited “there are many similarities between hypnosis and meditation induction procedures. Both encourage subjects to assume a comfortable position and to focus upon breathing. Both are used by therapists to bring about stress and pain reduction, to increase self-understanding” (p 101).

Paradis (1971) defined hypnosis as the formal process of initiating the hypnotic state for the purpose of using it to achieve a desired response (the person’s goal). He even implemented Galvanic Skin Response (GSR) to determine if the subjects had reached the hypnotic state. He discussed that several factors should be considered in formulating positive suggestions to be given to a person in a hypnotic state: (a) whether or not the subject has a good visual imagination; (b) whether he will be participating in what is being suggested (active state) or whether he will be listening (passive state).

Morse et al. (1977) monitored 48 Subjects, including 37 males and 11 females, with a mean age of 29, for respiratory rate, pulse rate, blood pressure, skin resistance, EEG activity, and music activity during the alert state, meditation (Transcendental Meditation or simple word type), hypnosis (relaxation and task types, and relaxation). The results showed significantly better relaxation responses for the relaxation states than for the alert state. There were no significant differences between the relaxation states except for the measure of “muscle activity” in which meditation was significantly better than other relaxation states. Relaxation-hypnosis and meditation were significantly better than relaxation, but no significant differences were found between meditation and relaxation-hypnosis.
Bärmark & Gaunitz (1979) further examined the effects of transcendental meditation and relaxation hypnosis on subjective phenomena and physiological arousal between 23 subjects who were experienced mediators and 19 subjects who were highly susceptible to hypnosis, but with little hypnotic experience. The 19 subjects were exposed to hypnosis. The conclusion was that both states are similar phenomenological altered states of consciousness.

Delmonte (1984) also discussed the numerous similarities between the practice of relaxation hypnosis and mantra meditation. Both integrated meditation and relaxation-hypnosis can be constructed as altered states of consciousness, those have similar induction procedures and many state effects. This includes relaxed absorbed attention as a facility for alpha and theta wave production. Hypnotic suggestibility may be increased both during meditation per se (state effects) and in the long term with continued practice (trait effects). Those who report benefits from meditation practice tend to show a trait of high hypnotizability. Delmonte concluded that the distinction between integrated meditation and relaxation-type autohypnosis in terms of state effects is somewhat blurred, in other words, the induction procedure for relaxation-type hypnosis, especially autohypnosis, may resemble that of some forms of meditation.

Halsband et al. (2009) also interpreted both hypnotic trance induction and different meditation traditions as altered states of consciousness that both emphasize attention, concentration, and the letting go of thoughts through neuroscientific evidence. However, their interpretation differs in terms of sensory input, processing, memory and the sense of time (See Table 2.1 below).
Table 2.1.
Comparison of Hypnosis with Shamatha and Vipassana Meditation (adapted from Halsband et al. 2009, p 196).

<table>
<thead>
<tr>
<th></th>
<th>Hypnosis</th>
<th>Meditation</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Shamatha</strong> focused attention</td>
</tr>
<tr>
<td>Interactions</td>
<td>special rapport</td>
<td>independence, empathy for all living</td>
</tr>
<tr>
<td></td>
<td></td>
<td>beings, bliss</td>
</tr>
<tr>
<td>Input/Processing</td>
<td>limited and determined by the</td>
<td>focused, deliberately controlled</td>
</tr>
<tr>
<td></td>
<td>suggestion</td>
<td></td>
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<tr>
<td>Concentration</td>
<td><em>explicit learning:</em> increased</td>
<td>increased concentration</td>
</tr>
<tr>
<td></td>
<td>memory for high-imagery material,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>reduced memory for abstract</td>
<td></td>
</tr>
<tr>
<td></td>
<td>material</td>
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<tr>
<td></td>
<td>improved <em>implicit learning</em></td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sense of Time</td>
<td>time distortion,</td>
<td>focus on the here and now</td>
</tr>
<tr>
<td></td>
<td>progression/regression</td>
<td></td>
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<tr>
<td>Stress Coping</td>
<td></td>
<td>reduction of stress</td>
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</tbody>
</table>

In short, in terms of inducing the state of deep relaxation as altered states of consciousness, both guided relaxation meditation and hypnosis reach similar effect (Lynn et al., 2006). The state of relaxation and alertness appears to be an ideal situation that accelerates foreign language learning. Lozanov (1978, 2009) suggested that it is absolutely necessary to arouse the state of both relaxation and alertness in order to activate the hidden reserves of mind when presented a large amount of language learning material. Thus, related phenomena like the
placebo and Pygmalion effect will be evaluated next, for they have a great potential to impact and tap into the hidden reserves of mind.

**Pygmalion effect, Placebos and Suggestopedia**

**Pygmalion effect.** White (1981) investigated the Pygmalion effect, and in particular its implication for students’ self-concept and academic performance. This study was conducted during a regular school year in a predominantly black, urban high school in Georgia. Fifty-four subjects were chosen on the basis of their frequent absences from school. In this experimental study, teachers were told that the students were part of a beneficial study, so the teachers saw significant positive changes in the students’ behaviors. Because their teachers saw them in more favorable light, the students saw themselves in a more positive manner.

Maddux (1998) summarized what we have learned from two decades of research and concluded that the Pygmalion effect is grounded on people’s beliefs in their capabilities to produce desired effects by their own actions. Murphy et al (1999) further explained that the Pygmalion effect is an analogy for what is known as “self-fulfilling prophecy” and is defined in the literature to “incorporate the idea that the expectation of an event or occurrence is instrumental in it coming to pass” (p 238). Murphy (1999) also indicated that learners whose instructors expected high performance of them attained the highest levels of performance. Some examples are displayed below in Figure 2.1.
Figure 2.1. Prescriptions for implementing pygmalion in the performance/training context (adapted from Murphy et al 1999. p 248).

Suggestopedia and placebo. Bancroft (1982) described the Suggestopedia techniques and recounted how to apply them within the limitations of the traditional foreign language classroom and cited beginners’ French classes by implementing these techniques. In Bancroft’s opinion, Suggestopedic techniques definitely improved the class atmosphere and student motivation, even when these techniques were limited to (or by) the traditional foreign language classroom.

Ramirez (1986) investigated a study with an aim to determine if teaching by Suggestopedia would produce a measurable difference in the English vocabulary achievement in a group of 75 Spanish-dominant Chicano students. As a result, this study showed Suggestopedia to be more effective than the control method. The author promoted the Suggestopedia theoretical framework to American foreign language learning and teaching domain.
Felix & Lawson (1994) also hosted a 10-week series investigation of a class with the same teacher carrying out the teaching for both experimental (Suggesopedia essences) and control conditions. The results showed significantly improved students’ performance in tests of recall word production, fluency, writing quality, and transfer of grammatical items.

Fundamentally, the Suggestopedia system is based on the idea that the acquisition of information can occur in states below the optimal level of consciousness. Suggestopedia presents lesson material by utilizing repetition, rhythm, and intonation as aids to memorization. Suggestopedia makes use of active concentration in a state of relaxed alertness. (Bancroft 1981). Bancroft claims that the Suggestopedia system has very positive effects on the memory and wellbeing of students. Bancroft (1999) further elaborated that the SALT Method incorporates the basic elements of Suggestopedia as well as three principles: joy and absence of tension and concentrative psych relaxation; the unity of conscious and subconscious and integral brain activity; and lastly the suggestive link on the level of the reserve complex. Suggestion is used “to tap the normally unused reserves of the mind for increased learning” (p 247).

Georgi Lozanov asserted that the reason for our language learning inefficiency is that “we set up psychological barriers to learning: we fear that we will be unable to perform, that we will be limited in our ability to learn” (Larsen-Freeman, 1986, p 72). According to Lozanov (2009), we may only be using five to ten percent of our mental capacity. In order to make better use of our mental reserves, we need to be de-suggested. Larsen-Fressman (1986) introduced Suggestopedia as the application of the study of positive suggestion to pedagogy.

Lozanov (2009) did not deny that Suggestopedia was introduced to students in the context of a suggestive-desuggestive ritual placebo-system since he maintained that placebos both cure and teach when the patient or pupil credits them with the power to do so. Similarly,
Hammond (2011) demonstrated that a large proportion of the improvements resulting from psychiatric medication treatments were the result of placebo effects. Even though placebo effects are an active ingredient in all therapeutic modalities, clinicians can view placebo responses as actually representing a resource to be encouraged and maximized rather than being a negative tool to be controlled. Hammond encouraged people to create positive expectancies and to incorporate positive suggestions to further enhance neurofeedback treatment outcomes.

In summary, studies have shown that both meditation practice and Suggestopedia theory and methods have positive effects on reducing stress levels and enhancing learning ability. Thus, the next investigation is to further evaluate whether bilingual guided meditation practice could possibly have the advantage of all essences both from meditation practice and from Suggestopedia theory to reduce stress levels and enhance learning ability in the course of mastering a foreign language. In the next section, we will continue to investigate the potential effects of the important variables of bilingual guided meditation practice, such as positive suggestion, background music, relaxation, and bilingual input.

**The Potential Effects of Bilingual Guided Meditation**

In this study, the BGM® program is defined as bilingual guided meditation that incorporates the vital three essences of Suggestopedia theory, namely, background music, relaxation, and positive suggestion input.

**The effects of positive suggestion.** Oldridge (1982) examined hypnosis as an instructional aid to remedial reading with results showing improvement in all subjects. The relative effectiveness of hypnotic and non-hypnotic suggestion was also compared and indicated that although hypnotized subjects scored higher than those receiving non-hypnotic suggestion on all but one variable, none of the differences were statistically significant. However, both
experimental groups scored higher than the control group (subjects received neither suggestion nor hypnosis).

Oldridge also discussed the use of hypnosis in education as a useful tool in improving “concentration, reducing test anxiety, increasing motivation, and facilitating learning” (p 281). Oldridge argued that non-hypnotic suggestion encompasses all forms of suggestion apart from hypnosis and further posited “suggestions are usually most effective for both individuals and groups when they are made during times of physical relaxation” (p 285).

Shuck & Ludlo (1984) further exposed 60 mildly mentally handicapped students and 60 non-mentally handicapped students to positive, negative, or neutral suggestions concerning their performance. The study found improved performance of the subjects given positive suggestion. Shuck & Ludlow encouraged trainers to facilitate faster learning with positive performance suggestions employed.

Similar as the Pygmalion effects recounted above, Lowenthal (1986) discussed the use of positive suggestions for disabled children to help them think of themselves as successful learners and combat negativity and helplessness. The positive suggestions can be reinforced verbally through visualization techniques. Lowenthal proposed that, with positive suggestions, teachers can turn negative self-fulfilling prophesies into positive ones.

As a singer, psychologist, and hypnotherapist, Pullen (2006) even suggested how to utilize positive suggestions to write great songs as below:

You find yourself in this quiet, peaceful place…enjoying touch in this special place. Feel the sense of peace flow through you…a great sense of well-being…you will allow these positive feeling to grow stronger and stronger, feeling a peace with life-flowing, flowing, flowing…words just pop into your mind and they’re good words…Songs just come out and they’re good
songs…You know that you can feel loose, free, with not a care in the world…Flowing embraces you and the songs write themselves…songs of life and power and passion (p 224).

Shimbo (2008) investigated the effects of the three major factors of Suggestopedia (music, relaxation, and suggestion) on students’ affect and development of communicative competence in tertiary Japanese language classes. It was found that suggestion influenced the students positively, and their self-concept increased significantly among the three independent variables. The findings implied that teachers’ positive messages were powerful tools to enhance students’ ability in learning foreign languages.

**The effects of background music, relaxation and bilingual input.**

**Music & relaxation.** As discussed before, the Suggestopedia teaching method values the integrated approach to take care of the learners as valued human beings. Thus, the Suggestopedia teaching method suggests that the teachers should integrate the music into their reading presentation when delivering the texts and changes the tones of their voices (intonative reading with music in the background). In this way, the right hemisphere of the brain will be activated while the left hemisphere will be relaxed to create optimal conditions for sustaining selective attention. Therefore, the simultaneous presentation of two elements, which is the specialty of their respective hemispheres, enables the brain to call upon all its resources to assimilate new data (Racle, 1979).

Suggestopedia is a form of educational dynamics, which focuses on the whole person, taking into account the conscious and unconscious duality of the student. In accordance with the principles of Suggestology, the process of Suggestopedia is conducted at three levels: psychological, didactic, and artistic. While creating a state of psychological relaxation, it uses every possible suggestive interrelationship to overcome psychological resistance and to develop
new mental behavior. The main principles of Suggestopedic teaching are pseudo-passivity, synthesis, and suggestive inter-relation. The principal suggestive factors that can break down anti-suggestive barriers are prestige or authority, verbal and non-verbal levels in acts of communication, and the integration of the arts, especially music (Racle, 1979).

Racle (1979) proposed that music plays a large part in creating a pleasant suggestive atmosphere, making it possible to overcome anti-suggestive psychological barriers or reduce their impact. Racle argued that this use of music is probably one of the most useful and beneficial contributions of Suggestopedia. Through listening to a well-chosen piece of music, the individual will gradually drop both moral and physical tension.

Snyder & Chlan (1999) systematically expounded that music had been shown to influence a broad range of outcomes positively including alleviating anxiety, promoting relaxation, improved mood, reducing pain, decreasing agitation, improved exercise performance and increasing food intake among various population. Sung et al (2013) examined the effectiveness of a preferred music listening intervention for reducing anxiety in 29 older adults with dementia in nursing homes. The study was conducted in a long-term care facility in Taiwan. 29 participants (65 years and above) received a 30-minute music listening intervention based on personal preferences delivered by trained nursing staff in mid-afternoon, twice a week for six weeks. The results indicated that preferred music listening has a positive impact by reducing the level of anxiety in older adults with dementia. This article enriches the literature which has shown that rhythmic music has a profound effect on people’s mind and body, since music has been found to help with attention deficit disorders, anxiety, and depression (Kraut, 2007). For example, music with a slower tempo promotes a calm, relaxing state because slow tempo music
can result in slower breathing, slower heart rate, and an activation of the relaxation response, which helps alleviate the damaging effects of chronic stress.

On the other hand, Oldridge (1982) further posited that “suggestions are usually most effective for both individuals and groups when they are made during times of physical relaxation” (p 285). Bancroft (1982) cited beginning French classes as an example of the Suggestopedia essential elements utilized, in particular, the soothing teacher’s voice and the relaxation session for unconscious assimilation of the lesson material. Those students who achieved the best results in both written and oral work were those who relaxed the most, which improved memorization of vocabulary and lesson texts.

Shimbo’s study (2008) also found that suggestion has a significantly positive effect on self-concept. Considering that the teacher’s simple positive messages affected student’s self-concept in just four sessions, it is evident the teacher plays an important role in the effective learning process. Future research should seek even better information on the types and frequency of messages and the teacher attitudes that improve students’ affect in learning. This would improve learning in general and such research would benefit teacher-training programs in particular.

Bancroft (1999) indicated that the behavioral state most closely identified with alpha activity is relaxed wakefulness (i.e., an alert but relaxed state). Bancroft also put forward the suggestion that “if the left hemisphere specializes in analysis, the right hemisphere is more holistic and relational” (p 156).

Csikszentmihalyi (1996) posited that creative people have a sense of control when they are in the state of flow, which is a timeless feeling. Hagiwara (2010) also discussed how teachers in Suggestopedia create a playful atmosphere in the classroom. For example, music is used to
bring harmony to student creativity. Several researchers (McElhinney & Annett, 1996; Wallace 1994) expounded the benefit of music as a memory aid.

Anton (1990) attested that music bridges both the left and right hemisphere of the brain simultaneously to strengthen retention and induce a productive learning state, since the right hemisphere is activated under the appropriate music and the left hemisphere is relaxed to create optimal conditions for sustaining selective attention. Salcedo (2002) indicated that music possess an invaluable key to incorporate the whole brain in the learning process, which promotes students to accelerate language learning in a relaxing and motivating manner.

Gilmor (1999) evaluated five empirical research investigations involving 231 learning and communication disorder children under the treatment of the Tomatis Method, which stresses the importance of intonation as well as rhythmic presentation of material. Similar to the Suggestopedia method, the Tomatis method also favors the use of baroque or classical violin music and emphasizes the development of memory through listening and repetition to promote indirect attention to, and unconscious absorption of lesson material while the students are in a relaxed state.

Richards & Rodgers (2001) further defined three functions of music in therapy: to facilitate the establishment and maintenance of personal relations; to bring about increased self-esteem through increased self-satisfaction in musical performance; and to use the unique potential of rhythm to energize and bring order.

Patel (2008) expounded that music and language are closed related in cognitive and neural system. Rogers (2009) further summarized that rhythmic music has a profound effect on
the body and mind. Listening to soothing music, such as classical or slow tempo music, can “promote a calm, relaxing state” (p 64).

**Bilingual input.** In terms of the effect of bilingual input, ter Kuile et al (2011) discovered that multi-group confirmatory factor analyses showed that bilingual students scored significantly higher than monolingual students on metalinguistic awareness and the ability to understand an unknown language.

Barac & Bialystok (2012) also studied 104 children that belonged to either bilingual or monolingual groups to examine the generality of the bilingual effects on development by comparing three verbal tasks and one nonverbal executive control task. This study “…provides evidence for the distinction between the linguistic and cognitive outcomes of bilingualism. The results endorse the conclusion that bilingualism itself is responsible for the increased levels of executive control previously reported” (p 420).

**Summary**

In this literature review, we have sampled and surveyed current literature related to different models of meditation practice and their effects on reducing stress levels and enhancing cognitive learning ability. Moreover, the three essences of the Suggestopedia theoretical framework to accelerate foreign language learning (music, relaxation, and suggestion) have been evaluated. Furthermore, the psychological principles of Suggestopedia theory, related to the placebo, Pygmalion effect, and hypnosis, were also investigated.

As discussed above, the literature review has evaluated and analyzed the positive effects on reducing the stress level and enhancing the learning ability both from three essences of the Suggestopedia theory and from meditation practice, especially in the area of foreign language acquisition. Even though each variable contributes more or less value, we can conclude that the
appropriate incorporation of all-important variables into foreign language acquisition would very possibly generate positive results to reduce the stress levels and accelerate foreign language learning.

Gunnlaugson (2004) advocated that education should go beyond simply presenting alternatives to integrate the best of mainstream and alternative approaches to the next level in the evolution of educational theory and practice. Esbjörn-Hargers (2006) also encouraged educators to try new ways of thinking, perceiving, and reflecting on the transformations of teacher, students, and classroom. Inspired by Lozanov’s theory based on the assumption that learning involves the conscious and unconscious functions of the learner. Moore (1992) investigated a form of meditation accompanied by music to his elementary Spanish classes to prove Lozanov’s theory, which is, if we can access the subconscious mind, students can be free to assimilate much more than they now do and can become super learners. Even though studies have shown that meditation practices have significant effects on reducing the stress levels and enhancing students’ learning ability, there is still urgency to conduct more empirical research as Moore did. Therefore, this study focused on how the BGM® practice might alleviate the stress levels and enhance academic abilities for college students to learn a foreign language.
Chapter III: Research Design

The following chapter outlines key aspects related to how this research study was designed and conducted. First of all, the research questions and directional hypothesis are outlined and justified based on theoretical and empirical evidences. Next, the specific research design selected for the study is discussed. Then, the population under investigation is defined and sampling procedures are explained. The collection of data, including the instruments that were utilized, the procedures that were followed, and the protection of participants, are outlined as well. The procedures for data analysis are then discussed. Finally, issues surrounding validity, reliability, and generalizability are addressed.

Summary of Literature Review

There is growing literature emphasizing that foreign language learning anxiety has a negative impact on language acquisition skills (Brantmeier, 2005; Horwitz et al., 1986; Lonsdale, 2006; Saito et al., 1999; Young, 1999; Zhang, 2002; Zhao, 2008). Previous research has found that meditation practice has significant effects on reducing stress/anxiety levels (Edwards, 1991; Miller, Fletcher & Kabat-Zinn, 1995; Shapiro & Walsh, 2003; Tate, 1994). Furthermore, meditation has been found to be related to improved school grades, learning ability, and short- and long-term recall (Moore, 1992; Shapiro, Brown & Astin, 2011; So & Orme-Johnson, 2001; Schlesiger, 1996; Tloczynski & Tantriella, 1998).

Recently, a consensus on incorporating all human dimensions into learning and inquiry is emerging (Ferrer et al., 2010). Meditation practice is one of the approaches that address nonacademic dimensions (Albrecht et al., 2012; MaCown et al., 2011). In the last few years, the researcher developed a Bilingual (English/Chinese) Guided Meditation (BGM®) program to
create a relaxed and positive mindset so as to reduce student anxiety in a foreign language class and optimize their learning of the Chinese language.

Although contemplative education has been gradually receiving mainstream acceptance worldwide as a valuable tool that creates an increased state of restful alertness (MaCown et al., 2011), empirical research on contemplative education remains in its infancy. Studies, with a control group, are pressingly needed to investigate whether the incorporation of contemplative techniques with curriculum subjects enhances academic performance and general well-being (Albrecht et al., 2012). Craig (2011) strongly suggests that future research should prioritize the collection and evaluation of student performance. The study aims to answer this call and enrich the literature by evaluating the acceptability and preliminary outcomes of incorporating BGM® in Chinese language courses at the college level.

**Research Questions**

The purpose of this study was to investigate whether the BGM® practice in Chinese language courses reduces the foreign language learning anxiety level and enhances the foreign language learning performance at the college level. The following overarching and sub-questions are addressed.

**Overarching research question.** What is the effect of the BGM® practice on foreign language classroom anxiety level and academic performance among Chinese language learners in a large, urban private university in the United States?

**Sub-questions.** 1) What is the effect of the BGM® practice on undergraduate Chinese language learners’ anxiety levels? 2) What is the effect of the BGM® practice on undergraduate Chinese language learners’ academic performance? 3) What are the perceptions of the BGM® program among Chinese language learners?
Dependent variables (DV) and independent variable (IV). There are three dependent variables in this study: anxiety level (DV1), academic performance (DV2), and subjects' perception of the independent variable, which is the Bilingual Guided Meditation (BGM®) program (IV).

The Purpose of Research Questions

Lozanov (1978, 2009), the founder of Suggestopedia, posited that a foreign language could be learned more quickly if students can relax and overcome their anxieties. Researchers have also evaluated and analyzed the positive effects of three essences of Suggestopedia, namely, music, relaxation, and positive suggestion (Bancroft, 1999; Dhority, 1991; Dhority & Jensen, 1998; Meng-Ching, 2000; Quast, 1999; Shimbo, 2008). Even though each factor contributes varying value, appropriate incorporation of all three variables into foreign language acquisition can very possibly generate positive results to reduce the anxiety levels and accelerate foreign language learning.

The BGM® program is novel in its combination of bilingually positive suggestion input with the benefits of guided meditation and relaxing background music. The goals of the study are to evaluate the impact of the BGM® program on college-level learners of Chinese language in classroom settings, and to use this information for program refinement. The investigator plans to conduct an empirical study with two specific aims: (1) to assess its outcomes in terms of reducing anxiety and enhancing Chinese language learning, and (2) to evaluate the acceptability of the BGM® in foreign language classrooms.

Hence, the aforementioned research questions aim to evaluate: (1) the effect of IV (the BGM® program) on the three DVs, namely, anxiety level, academic performance, and subjects’ perception of IV; and (2) perceptions of IV among college Chinese language learners.
Primary directional hypotheses. 1) BMG® Practices reduce the anxiety levels of college students in learning a foreign language. 2) BGM® Practices enhance foreign language learning performance.

Research Design

The study utilized a mixed method approach as follows: 1) A quantitative method compared baseline and post-intervention anxiety levels regarding foreign language learning and use a quasi-experimental assessment to assess Chinese language skills at pre and post-intervention levels. 2) A qualitative method (a questionnaire) investigated the students’ perspectives on the acceptability of the BGM®.

First, a quantitative quasi-experimental design was utilized in this study. The effects of the BGM® on anxiety reduction and academic enhancement were assessed by this quasi-experimental method. Next, to obtain supplemental qualitative data to assist interpreting the data collected quantitatively, the perceptions of the BGM® (Bilingual Guided Meditation) among college Chinese language learners were investigated by using an open ended semi-structured questionnaire.

All groups were given a pretest to establish baseline scores for students’ foreign language anxiety levels and Chinese language written levels. Half of the classes were assigned to the treatment groups and half to the comparison groups. The treatment groups received the BGM® intervention and the comparison groups received the same Chinese language instruction without the BGM® practice. At the end of each semester of the BGM® intervention, both groups took posttests on anxiety levels and Chinese written language performance respectively.

This quasi-experimental research design has advantages over pure experimental designs in the laboratory setting because the researcher can be confident that any potential effects
generated from this study work in real classrooms. Thus, a quasi-experimental design is “a good way of evaluating new initiatives and programs in education” (Muijs, 2010, p. 29), exemplified by investigating the innovative BGM® program in the foreign language classroom settings in this study.

Even though half of the classes were assigned to the treatment groups and half to the comparison groups, the lack of random assignment among all Chinese learners in this university and related potential validity issues will be the major disadvantages of this design (Fraenkel, Wllen, & Hyun, 2011; Muijs, 2011). For instance, potential significant differences in anxiety levels and Chinese language levels between the BGM® groups and control groups before the intervention is a primary threat to internal validity when analyzing any significant differences on post-tests. To minimize this disadvantage, Tests of Between-Subjects Effects (ANCOVA) were implemented. This statistical technique allows the investigator to evaluate the posttest means with the consideration of initial differences of baseline levels between the BGM® groups and control groups.

**Population and Sampling**

In order to improve students’ learning of Chinese language, Bilingual (English & Chinese) Guided Meditation (BGM®) practice has been incorporated into foreign language classroom settings at a large, urban private university in the New England area. This innovative research study received IRB approval.

In the regular 14-week semesters (2016 Fall & 2017 Spring), a five-minute BGM®, which included a three-minute BGM® practice at the beginning of each class and a two-minute BGM® at the end class, has been practiced in one section of beginning (CHNS 1101) and intermediate
(CHNS 2101) Chinese courses. The control group received the same Chinese language instruction without the BGM® practice.

The target population is undergraduate Chinese language learners in the United States. The accessible population is Chinese language learners enrolled at this university, and the sample was comprised of the students who enrolled in Chinese language beginning and intermediate level courses (CHNS 1101 & CHNS 2101) and practice the BGM® program for one 14-week semester during the 2016 Fall and 2017 Spring semester.

In this study, the sample and population is identical. Participants include undergraduate students who enrolled in Chinese language courses and practice the BGM® program for a one-semester period of time. The researcher used convenience sampling, which included “a group of individuals who (conveniently) are available for study” (Fraenkel, Wallen, & Hyun, 2011, p. 99). The advantage of this sampling is its accessibility and convenience since the researcher has been teaching Mandarin Chinese at this university since Fall 2008. Thus, the researcher collected two semesters (14 weeks per semester) worth of data (60 participants) in the Fall 2016 and the Spring 2017.

In the two semesters, two beginning (CHNS 1101) and two intermediate (CHNS 2101) undergraduate courses were assigned into two intact experimental and comparison groups. The sample size of all groups were 60 (the maximum enrollment for each class is 18) in order to meet the minimum requirement for a t-test/ANCOVA possible statistically, while Alpha (α) is set at .05 for both the t-test and ANCOVA (Hertzog, 2008).

At the beginning of each semester, placement tests of Chinese written language (as a baseline) were conducted. An introduction to the study was also given when informed consent forms were signed by participants. In this introduction session, the researcher administered the
Foreign Language Classroom Anxiety Scale (FLCAS, Horwtiz, 1986) to participants. Participants took the final test (as a post-test) when the semesters ended. During the last class of each semester, the researcher administered both the post-FLCAS and the semi-structured questionnaire, which covers participants’ perception of the acceptability of the BGM® practice, its utility and its efficacy for reducing anxiety and enhancing Chinese language learning. The questionnaire includes three types of questions: Likert scale, yes/no/not sure checklist, and open-ended questions. All self-report Foreign Language Anxiety Level tests were inputted by a trained work study student (coded by participants’ birthday numbers), and all academic pre and post-tests were evaluated by two raters (made anonymous by removing participants’ names) as well.

Data Collection

Instruments. In order to answer the following three sub-questions, 1) what is the effect of BGM® practice on undergraduate Chinese language learners’ anxiety level? 2) what is the effect of BGM® practice on undergraduate Chinese language learners’ academic performance? 3) what are the perceptions of BGM® program among Chinese language learners? the researcher implemented three instruments to collect continuous data to answer the first two sub-questions and ratio data to answer the last sub-question. A brief description of the three instruments and discussion of their validity and reliability are listed as follows.

Foreign language classroom anxiety scale (FLCAS). Anxiety levels (DV1) were measured by a version of Horwitz’s Foreign Language Classroom Anxiety Scale (FLCAS, see Appendix C) at the beginning and end of the courses. FLCAS includes a 5-point Likert scale survey with 33 questions and has been validated as a measure of student foreign language classroom anxiety level, informed by literature review (Horwitz et al, 1986).
Although this 5-point Likert-type scale is a technically ordinal scale, it is an acceptable practice to treat ordinal scales as continuous variables in the statistical SPSS analysis (Norman, 2010), whereby parametric tests, e.g., t-test, and ANCOVA, could be used. Thus, the ordinal variables collected from the FLCAS scale in this study are treated as continuous data for statistical tests.

Muijs (2011) referred reliability to “the extent to which test scores are free of measurement error” (p. 71). This can be achieved by repeated measurements and internal consistency reliability. Horwitz et al (1986) has performed a pilot study among 225 students and yielded both a significant alpha coefficient of .93 with all 33 items and a high test-retest reliability (r = .83, p < .001). Horwitz’s study has provided the evidence of adequate internal consistency of the FLCAS as a measure of anxiety in the foreign language classroom, which meets the commonly accepted level of .70 posited by Muijs (2011). The questionnaire assesses participants' communication apprehension, test-anxiety and fear of negative evaluation. Permission for use in this study has been granted by the author (see Appendix E). According to FLCAS’s guidelines, the higher the score is, the lower anxiety level is.

**Academic performance evaluation.** Students took a placement test of Chinese writing language (as a pre-test) before the courses started in the 2016 Fall and the 2017 Spring semester, and took the final test (as a post-test) when the courses ended. The researcher compared the continuous data from the pre and post-test results of the students who practiced the BGM® with those who did not. The researcher collected nominal and continuous data to evaluate the effect of the BGM® practice on undergraduate Chinese language learners’ academic performance (DV2). Based on the guidelines from American Council of Teaching Foreign Language (ACTFL), the placement test and the final test have been developed and modified by a group of professional
Chinese instructors at this university, including the researcher who is a certified Chinese tester accredited by ACTFL. In addition, academic tests were scored by two raters based on the same rubrics for inter-rater reliability. The researcher conducted a normality test to ensure that the normality of the outcome (Chinese language scores) is not violated in the study.

**Feedback from the BGM® practice.** At the end of the courses, participants evaluated the BGM® program by completing a semi-structured questionnaire, developed by the researcher, which covers students' perception of the BGM® program (DV3), its utility and its efficacy for reducing anxiety and enhancing Chinese language learning. The questionnaire includes three types of questions: 5-point Likert scale, yes/no/not sure checklist, and open-ended questions (see Appendix D). The responses from the students’ feedback to the BGM® program were grouped conceptually to reflect similar emergent themes.

As indicated in the Table 3.1 below, the questionnaire consists of twelve questions, which are organized into six sections. The first section of the questionnaire asks questions related to whether the BGM® reduces foreign language learning anxiety. The first question (Q1) is measured on a 5-point rating scale from “very relaxed” to “less relaxed”. The latter two (Q2 & Q3) are measured on a Yes/No/Maybe checklist. The second section asks for self-evaluation of whether the BGM® affects their academic performance in Chinese classes. The first questions (Q4) in this section is measured on a 5-point rating scale from “Very useful” to “Not useful” and provides data regarding to the utility and efficacy of the BGM® program. The latter questions (Q5 & Q6) are measured on a Yes/No/Maybe checklist with additional comment options, which are focused on the influence generated by the BGM® practice in and/or outside of Chinese classes. The third section including Q7 & Q8 asks whether the participants will continue to use the BGM® practice, and recommend it to other students. The fourth section measures students’
preference of the presentation of the BGM® program with questions such as “which element of the BGM® program (bilingual format, positive suggestion input, music, guided meditation) do you like most”, and “which version of the BGM® program (Beginning of Class, End of Class, Both, or Neither one) do you feel most effective and helpful?”. Q10 in the five section is open-ended and asks for additional information about students’ experience of the BGM® program to gain insight into the assessment and attitude data from the students’ perspective. The last section asks for the participants’ demographic information including gender, age, Chinese language level, and family language background.
Table 3.1.

*Predictor Variables in the Questionnaire*

<table>
<thead>
<tr>
<th>Sections w/o additional comments</th>
<th>Predictor variables</th>
<th>Survey items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(Q1-3)</td>
<td>Anxiety reduction</td>
<td>Q1: How did you feel after you practiced the BGM®? (Very relaxed – Less relaxed)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q2: Did you feel less anxious after the practice?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q3: Did you feel that your mind became clear after the practice?</td>
</tr>
<tr>
<td>2(Q4-6)</td>
<td>Academic achievement</td>
<td>Q4: Did the BGM® practice enhance your concentration ability in the Chinese classroom?</td>
</tr>
<tr>
<td>Additional comments: Q5 &amp; Q6</td>
<td></td>
<td>Q5: Did the practice affect your Chinese class performance?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q6: Did you feel any life change outside of Chinese class</td>
</tr>
<tr>
<td>3(Q7-8)</td>
<td>Continuation &amp; recommendation</td>
<td>Q7: Will you continue to use the practice?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q8: Will you recommend the practice?</td>
</tr>
<tr>
<td>4(Q9-10)</td>
<td>Structure/Delivery of BGM®</td>
<td>Q9a: What do you think about the way the BGM® was presented?</td>
</tr>
<tr>
<td>Additional comments: Q9a, Q9b &amp; Q10</td>
<td></td>
<td>Q9b: Which elements did you like most (Bilingual format, Positive suggestion, Background Music, or Guided meditation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q10: Which BGM® version do you feel most effective (Beginning of Class, End of Class, or both)</td>
</tr>
<tr>
<td>5 (Q11)</td>
<td>Additional comments regarding the perceptions of the BGM®</td>
<td></td>
</tr>
<tr>
<td>6 (Q12)</td>
<td>Participant Demographic Data</td>
<td>Gender, Age, Chinese Level &amp; Family language background</td>
</tr>
</tbody>
</table>
Based on the theoretical and empirical basis discussed in the previous chapters, the goals of the study are to evaluate the impact of the BGM® program on college-level learners of Chinese language in classroom settings, with two specific aims: (1) to evaluate the acceptability of the BGM® in foreign language classrooms and (2) to assess its outcomes in terms of reducing anxiety and enhancing Chinese language learning. Suggestopedia theory not only provides the primary theoretical framework for the research design, but offers the tools for analysis of the three essences of the Suggestopedia theoretical framework to accelerate foreign language learning (music, relaxation, and positive suggestion) as well. The principle of this research is based on the notion that these three variables could be integrated into the BGM® program.

Previous studies including both theoretical and empirical basis have shown that Suggestopedia theory and methods have positive effects on reducing stress levels and enhancing learning ability. Thus, the study aims to evaluate whether BGM® program can have the advantage of all essences both from meditation practice and from Suggestopedia theory to reduce stress levels and enhance learning ability in the course of mastering a foreign language. Hence, the self-constructed questionnaire aims to investigate the students’ perception of the effects of the BGM® program on DV1 (anxiety reduction), DV2 (academic enhancement), and important variables of BGM® practice, such as positive suggestion, background music, bilingual input, and guided meditation.

Demographic questions constitute the fifth, final section of the questionnaire. They provide information regarding participants’ age, gender, and language spoken at home (parents). The last question in this section has an open-ended option for the participants to provide additional comments to justify their answers.
Both Creswell (2008) and Fraenkel et al (2011) discussed the pitfalls of creating their own instruments and how to develop a survey instrument through the process of planning, construction, quantitative evaluation, and validation. However, because the BGM® program is novel and the study is the first nonequivalent controlled trial of a classroom-based BGM® intervention for college foreign language learners, the researcher has decided to use a self-constructed survey instrument for research question 3 (RQ3). Thus, the survey’s validity and reliability issue becomes pivotal and is critical to the quality of the results of RQ3. In order to secure the content validity of this instrument, the content of the questionnaire has been evaluated and modified by Prof. Chieh Li, an Educational Psychology Professor at this university, who has expertise in psycho-educational assessment. This arrangement assisted in examining whether the questionnaire is relevant to measure the perceptions of the BGM® program from the students’ perspective.

In summary, Kimberlin & Winterstein (2008) posited that the reliability and validity of the measures are crucial indicators of the research quality. Fraenkel et al. (2011) defined validity as “the appropriateness, correctness, meaningfulness, and usefulness of the specific inferences researchers make based on the data they collect” (p. 148), such as content, criterion, and construct-related evidence of validity. In this study, the researcher has obtained expert judgment for both the FLCAS and the BGM® feedback questionnaire as content-related evidence. As far as criterion-related evidences are concerned, the researcher compared the results generated from the instruments related to anxiety reduction and academic performance with the results concluded from the students’ feedback questionnaires. In terms of construct-related evidence, the researcher designed the students’ feedback questionnaire based on the predictions made from the theoretical framework and literature review.
Procedures

In the 2016 Fall semester and 2017 Spring semester (14-weeks each term), a five-minute BGM® was practiced in the Chinese language courses (the cumulative practice time for each student was 210 minutes) at this university. The control groups received the same Chinese language instruction without the BGM® practice.

The BGM® program aims to protect students from the negative effects of stress exposure related to foreign language learning by cultivating a relaxed and positive mindset. This BGM® program includes two versions: A 3-minute BGM® as a beginning of class activity and a 2-minute BGM® as an end of Class activity (see Appendix A and B: BGM® scripts). With soothing background music, these versions of the BGM® program incorporate positive suggestions such as

*Our Chinese learning will be interesting and easy. In this class you will naturally begin tapping into your reserved potentials. We will have a joyful learning time together today.* (Beginning of Class BGM®), and *“What you have learned today will naturally stay in your mind. We are looking forward to our next happy Chinese learning.”* (End of Class BGM®).

The intervention is secular in nature, and the researcher did not utilize terminology that would be considered religious or unusual for this context.

As a quasi-experimental design in this research, it is very critical to check and guarantee the fidelity of implementation of innovative interventions (Protheroe, 2009), such as the BGM® program (IV) in this study. The implementation threat was controlled by a strategy in which the 3-minute BGM® and 2-minute BGM® are previously professionally recorded in a
media studio. The two audio recordings (mp3 files) only need to be played via a laptop at the beginning and end of each class respectively throughout the whole semester.

The implementation threat was also controlled by a strategy in which both BGM® and control groups were taught by the same instructor with the same teaching material. The instructional time allocated was consistent for all groups, that is, class meetings for the sections were three times per week on Mondays, Wednesdays, and Thursdays for fourteen weeks. Each class length lasted 65 minutes.

As aforementioned, the first step in the data collection occurred immediately following the first Foreign Language Classroom Anxiety Scale (FLCAS) measurement at the beginning of the 2016 Fall and 2017 Spring semester. All participants also took a placement test of Chinese written language at the first class. Next, participants from the BGM® group practiced 5 minutes BGM® for one 14-week semester. The control groups received the same Chinese language instruction without the BGM® practice. On the last day of each course, all participants took the final test and completed the post FLCAS measurement, and students for the BGM® group also completed the evaluation of the BGM® program by the aforementioned questionnaire. All data collection has been done at the institute by the researcher, entered by the same trained work study student based on a standardized documentation, and finally analyzed by the researcher.

During the process of data collection, it is important to evaluate and minimize possible threats to internal validity (Fraenkel et al., 2011). According to Creswell (2012) there are three categories of threats to internal validity. The first category includes threats related to participants of the study, such as history, maturation, regression, selection, morality, and interaction with selection. The second category indicates threats related to treatments of the study, such as diffusion of treatments, compensatory equalization, compensatory rivalry and resentful
demoralization. The last category addresses threats that are relevant to the procedures in the study, such as testing and instrumentation.

**Data preparation.** All data were entered by the same trained work study student based on a standardized documentation generated and were compiled by the researcher. In IBM’s statistical analysis software SPSS, the trained work study student input anxiety levels, academic performance, students’ perception of the BGM® program, and demographic information associated with each student’s birth date number (MMDDYY) and then deleted the name from the data file. Table 3.2 contains the data table of this study.
Table 3.2.

Data Used in This Study

<table>
<thead>
<tr>
<th>Independent and Dependent Variable</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety levels (DV1, pre and post-test)</td>
<td>Although this 5-point Likert-type scale is a technically ordinal scale, it is an acceptable practice to treat ordinal scales as continuous variables in the statistical SPSS analysis.</td>
</tr>
<tr>
<td>Academic performance (DV2, pre and post-test)</td>
<td>Continuous data (1-100)</td>
</tr>
</tbody>
</table>
| Students perception of the BGM® program (DV3) | • 5 point Likert-type questions: Multiple Choice Ordinal data  
• Yes/No/Not Sure Check list: nominal data  
• Open-ended questions: nominal data |
| Gender (IV) | M/F dichotomous nominal data |
| Family heritage language background (IV) | Nominal data |
| Age (IV) | Continuous data |

**Transformation of the data.** Both anxiety levels and academic performance are continuous data, the researcher looked at the mean and standard deviation. In terms of continuous data, a histogram is more effective than a bar graph with regards to the frequency distribution. Thus, the researcher used the histogram and Skewness data to check the assumption for the normality of academic performance data. If the data violated the assumption of the normality, the researcher transformed the skewed data by Logs ($\log_{10}$). The normal range of skewness is between 1.0 and -1.0, and parametric tests are robust against mild violations of assumptions. Thus, using parametric test should be defensible.

Since the questionnaire, designed to investigate the acceptability of the BGM® from students’ perspectives, consists of three categories/subscales (self-perception of anxiety reduction and language learning ability, and attitudes towards the BGM® program), the research
came up with the total score for a subscale by adding up the ordinal scale of each item. Thus, the researcher treated its originally ordinal scales as continuous variables to get the ratio data.

**Data Analysis: Choice of Statistical Techniques and Justification.**

1) What is the effect of the BGM® practice (IV) on undergraduate Chinese language learners’ anxiety level (DV1)? For research question one, both t-test and ANCOVA were implemented in order to answer the question integrally. First of all, this study aims to compare the means of the dependent variable of anxiety levels (pre-anxiety scores and post-intervention anxiety scores) within the BGM® group. A two-tailed paired samples t-test was used to assess where there is a significant reduction of anxiety observed within the BGM® group after one semester BGM® practice. Both pre and post Anxiety scores are continuous data.

According to Muijs (2011), the t-test is designed to measure whether the means of two samples differ and the cut-off point is less than 0.05. In order to gain the statistical robustness of data analyses generated from the paired samples t-test, the following assumption has to be checked: (a) dependent variables are continuous, (b) only compare two group data, and (c) samples are randomly selected form the population. However, the third condition is often quite difficult to meet in educational research, thus, Muijs (2011) notes that t-test is quite robust as long as the samples don’t differ two much in size.

When the researcher performed a paired sample t-test via IBM’s statistical analysis software SPSS, the following steps were followed: Analyze → compare mean → paired sample T-test → pre anxiety scores: variable 1; and post anxiety scores: variable 2 → confidence interval percentage: 95% → OK.

In order to answer this research question, the researcher analyzed the differences among the participants, who practiced the BGM® program for one semester, between the baseline mean
and the mean of post intervention anxiety scores. The researcher analyzed $p$-value to check whether there is any significant reduction of anxiety levels after practicing the BGM® program for one semester period of time.

Secondly, the possible threat generated by maturation is controlled by using the same anxiety level questionnaire for all groups. As such, all participants from the same level Chinese classes mature or grow in a similar level for both the BGM® and control groups to mitigate the possible threat. Given that (a) the study includes a quasi-experimental research (b) there are two groups of participants (a BGM® group and a control group), (c) the dependent variable is continuous (anxiety scores), and (d) the independent variable is nominal at two levels (a BGM® group and a control group). The purpose of this test is to compare the means of the dependent variable with the consideration of the initial difference of baseline levels between two groups as a covariate (Muijs, 2011).

In the second step of this study, a one-way ANCOVA was used as a statistical method to control for pre anxiety scores. According to Muijs (2011), one-way ANCOVA shares the similar purpose as ANOVA, which aims to investigate whether there is any significant difference in the mean of the dependent variable between two groups, whereas one-way ANCOVA controls the initial difference of baseline levels. Muijs posits that researchers need to look at both the effect size and statistical significance in order to compare the strength of the effect of the intervention (2011). In terms of the effect size, partial eta squared effect size ($\eta^2$) was used to analyze the effect size of the intervention while controlling for the covariate. Eta squared is interpreted in the following way: “0-0.1 is a weak effect, 0.1-0.3 is a modest effect, 0.3-0.5 is a moderate effect, and > 0.5 is a strong effect” (Muijs, 2011, p. 183).

Therefore, ANCOVA aims to evaluate post anxiety scores with the consideration of the
initial difference of baseline levels between the BGM® groups and the control groups. The
statistical method of ANCOVA is an appropriate test to evaluate whether there are any
significantly anxiety reduction observed for the BGM® group compared to the control group.

According to Tabachnich & Fidell (2013), in order to gain the statistical robustness of
data analyses generated from the ANCOVA test, the following assumption has to be checked: (a)
dependent variables are continuous or ordinal, (b) outliers are identified and removed from the
analyses, (c) the relationship between the dependent and independent variables is linear, and (d)
the dependent variables are approximately normally distributed (Mayers, 2013; Tabachnich &
Fidell, 2007b).

For example, the researcher used the histogram and Skewness data to check the
assumption for the normality of foreign language learning anxiety measure. If the data violates
the assumption of the normality, the researcher will transform the skewed data by Logs (Lg10).
The normal range of skewness is between 1.0 and -1.0, and parametric tests are robust against
mild violations of assumptions. Thus, using parametric test should be defensible.

When the researcher performed a ANCOVA test via IBM’s statistical analysis software
SPSS, the following steps were followed: Analyze → General Linear Model → Univariate →
Dependent: Post-Test (post anxiety scores); Fixed Factor: Group (BGM® and Control);
Covariate: Pre-Test (pre anxiety scores) → OK.

Based on the output table, in order to answer this research question, the researcher
analyzed the effects of BGM® on students’ post anxiety levels of participants who have practiced
BGM® for a one-semester period of time. The investigator evaluated the post anxiety scores with
the consideration of the initial difference of baseline levels (pre anxiety scores) between the
means of two groups (BGM® and control). The researcher compared the post anxiety scores of
the means between the BGM® and control groups. The researcher also analyzed \( p \) value to check whether there is any significantly higher reduction in anxiety levels for the BGM® group compared to the control group (the cut-off point is less than 0.05). If the result yields a significant difference between the two groups, the researcher checked the effect size (partial eta squared) to analyze the strength of the intervention as well.

2) What is the effect of the BGM® practice (IV) on undergraduate Chinese language learners’ academic performance (DV2)? For research question two, given that (a) the study includes a quasi-experimental research (b) there are two groups of participants (a BGM® group and a control group), (c) the dependent variable is continuous (Chinese language test scores), and (d) the independent variable is nominal at two levels (a BGM® group and a control group). The purpose of this test is to compare the means of the dependent variable with the consideration of the initial difference of baseline levels between two groups as a covariate (Muijs, 2011).

In this study, a one-way ANCOVA was used as a statistical method to control for pretest scores (a placement test of Chinese written language). According to Muijs (2011), one-way ANCOVA shares the similar purpose as ANOVA, which aims to investigate whether there is any significant difference in the mean of the dependent variable between two groups, whereas one-way ANCOVA control the initial difference of baseline levels. In terms of the effect size, partial eta squared effect size (\( \eta^2 \)) is used to analyze the strength of the intervention while controlling for the covariate (Muijs, 2011).

Therefore, ANCOVA aims to evaluate academic performance with the consideration of the initial difference of baseline levels between the BGM® groups and the control groups. The statistical method of ANCOVA is an appropriate test to evaluate whether there are any significantly higher gains observed for the BGM® group compared to the control group.
According to Tabachnich & Fidell (2013), in order to gain the statistical robustness of data analyses generated from the ANCOVA test, the following assumption has to be checked: (a) dependent variables are continuous or ordinal, (b) outliers are identified and removed from the analyses, (c) the relationship between the dependent and independent variables is linear, and (d) the dependent variables are approximately normally distributed (Mayers, 2013; Tabachnich & Fidell, 2007b).

For example, the researcher used the histogram and Skewness data to check the assumption for the normality of academic performance outcome measure (Chinese language scores). If the data violates the assumption of the normality, the researcher will transform the skewed data by Logs (Log\(_{10}\)). The normal range of skewness is between 1.0 and -1.0, and parametric tests are robust against mild violations of assumptions. Thus, using parametric test should be defensible.

When the researcher performs a ANCOVA test via IBM’s statistical analysis software SPSS, the following steps are followed: Analyze → General Linear Model → Univariate → Dependent: Post-Test (Chinese Final Test Scores); Fixed Factor: Group (BGM® and Control); Covariate: Pre-Test (Chinese Placement Test Scores) → OK.

Based on the output table, the researcher analyzed the effects of BGM® on students’ language learning performance of participants who have practiced BGM® for a one-semester period of time to answer this research question. The investigator evaluated the post test data with the consideration of the initial difference of baseline levels (placement test scores) between the means of two groups (BGM® and control). The researcher also compared the post-intervention academic performance scores of the means between the BGM® and control groups. The researcher furtherly analyzed \( p \) value to check whether there are any significantly higher gains in
Chinese language skills for the BGM® group compared to the control group (the cut-off point is less than 0.05). If the result yields a significant difference between the two groups, the researcher will check the effect size (partial eta squared) to analyze the strength of the intervention.

3) What are the perceptions of the BGM® program (IV) among Chinese language learners? This research question is descriptive and supplementary to the previous research questions. The researcher used descriptive statistics to have this research question answered.

Since the questionnaire consists of three categories/subscales (self-perception of anxiety reduction and language learning ability, and attitudes towards the BGM® program), the study came up with the ratio data. Thus, the researcher treats its original ordinal scales as continuous variables in the analysis. In addition, for open-ended questions collected from the self-report questionnaire, the researcher kept the nominal data as labels and looked at mode to see whether any grouped concepts that reflect similar emergent themes can be identified.

For demographic info of subjects: 1) gender and family heritage language background, the researcher calculated the frequency distribution to get the ratio data. 2) Age: the researcher looked at mean, range, standard deviation (SD) and median to check if there is any outlying ages within a range of traditional undergraduate age (18-23).

Since the researcher planned to report the construct validity and item reliability of the instrument (specific to the BGM® group of subjects), Cronbach alpha tests were employed to check the instrument’s stability and internal consistency reliability of this questionnaire.

To sum up, the self-constructed questionnaire consists of the above factors to investigate the students’ perception of the effects of the BGM® program on DV1 (anxiety reduction), DV2 (academic enhancement), and important variables of BGM® practice, such as positive suggestion, background music, bilingual input, and guided meditation. Thus, the researcher
looked at mode to see if there are any emerging themes related to anxiety reduction and academic enhancement.

Validity, Reliability and Generalizability

In terms of the limitation of the sample strategy, the primary threat is that the student self-report measure of the BGM® program administered in this study may be influenced by the students’ desire to make a favorable impression with the investigator or other sources of bias. Hence, when conducting this study, the researcher bracketed any presuppositions, prejudices, and biases from students’ and her own experience to “hold them in consciousness through all phases of the research and minimize their influence on the findings” (Braud & Anderson, 1998, p. 265).

In order to control personal bias and increase the inter-reliability in the study, all self-report Foreign Language Anxiety Level tests (coded by participants’ birth dates) were inputted by a trained work study student, and all academic pre and post-tests (made anonymous by removing participants’ names) were evaluated by two raters as well. In order to increase internal and external validity, the researcher also investigated the effects of the BGM® program via assessing the BGM® groups’ foreign language learning anxiety level and academic performance at baseline and post-intervention with a control groups.

Validity and reliability. First of all, the implementation threat was controlled by the strategy that both BGM® and control groups were taught by the same instructors with the same teaching material. The instructional time allocated was consistent for all groups, that is, class meetings for the sections were three times per week on Mondays, Wednesdays, and Thursdays for fourteen weeks. Each class length lasted 65 minutes. In addition, all data from the aforementioned measures was entered by the same trained work study student based on a
standardized documentation generated and compiled by the researcher.

During the process of data analysis, it is important to evaluate and minimize possible threats to internal validity (Fraenkel et al., 2011). According to Creswell (2012) there are three categories of threats to internal validity. The first category includes threats related to participants of the study, such as history, maturation, regression, selection, morality, and interaction with selection. The second category indicates threats related to treatments of the study, such as diffusion of treatments, compensatory equalization, compensatory rivalry and resentful demoralization. The last category addresses threats that are relevant to the procedures in the study, such as testing and instrumentation.

With respect to this quasi-experimental design, the first set of threats to internal validity is related to characteristics of the study subjects. In the study, participants consisted of full-time bachelor degree seeking, traditional-age undergraduates at this university. Since the project is related to second language learning and teaching, demographic information of the students’ family heritage language background was collected. Thus, subject characteristics from this study with a number of similar samples should not present a significant threat to internal validity.

The second threat is associated with mortality. According to Fraenkel et al (2011), any “lost” subjects may be different in some way from those that remained in the study, therefore the study results may be affected by the absence of the former category of subjects. In this study, the mortality threat is minimized by the strategy that all participants who are enrolled in CHNS 1101 and CHNS 2101 in the 2016 Fall and 2017 Spring semester took the placement tests and Post-tests as part of their course requirement. Location is another threat to internal validity as discussed by Fraenkel et al. (2011). As the study site was limited to one specific urban private university, minimizing this threat within the framework of this study might be
problematic. However, Fraenkel et al. (2011) contended the location threat as only moderate. The threat was minimized by acknowledging it and taking a cautious analysis when discussing the study results.

The last set of threats is associated with instrumentation (Fraenkel et al., 2011). The threat of the data collection characteristics and data collector bias were controlled by the strategy that the data for the study was collected through the administration of a standardized placement and post-test proctored by the same instructors for both BGM® and control groups. Academic tests were scored by two raters based on the same rubrics for inter-rater reliability. All data from the aforementioned measures was entered by the same trained work study student based on a standardized documentation to control the threat generated by data input to the internal validity. In addition, this kind of threats can be possibly generated from the questionnaire used to answer the RQ3, both Fraenkel et al (2011) and Creswell (2008) discussed the pitfalls of creating their own instruments and how to develop a survey instrument through the process of planning, construction, quantitative evaluation, and validation. However, since the BGM® program is novel and the study is the first nonequivalent controlled trial of a classroom-based BGM® intervention for college foreign language learners, the researcher decided to use a self-constructed survey instrument for RQ3. Thus, the survey’s validity and reliability issue becomes pivotal and is critical to the quality of the results of RQ3. In order to secure the content validity of this instrument, the content of the questionnaire has been evaluated and modified by Prof. Chieh Li, an Educational Psychology Professor at this university, who has expertise in psycho-educational assessment. This arrangement assisted examine whether the questionnaire is relevant to measure the perceptions of the BGM® program from the students’ perspective.

Kimberlin and Winterstein (2008) posited that the reliability and validity of the measures
are crucial indicators of the research quality. Fraenkel et al. (2011) defined validity as “the appropriateness, correctness, meaningfulness, and usefulness of the specific inferences researchers make based on the data they collect” (p. 148), such as content, criterion, and construct-related evidence of validity. In this study, the research has obtained expert judgment for both the FLCAS and the BGM® feedback questionnaire as content-related evidence. As far as Criterion-related evidence, the researcher compared the results generated from the instruments related to anxiety reduction and academic performance with the results concluded from the students’ feedback questionnaires. In terms of construct-related evidence, the research designed the students’ feedback questionnaire based on the predictions made from the theoretical framework and literature review.

To summarize, this study employed a mix method approach including a quasi-experimental, nonequivalent control group design, which provides some controls for the threats aforementioned. The advantages of the design and statistical methodology in the study included: (1) CHNS 1101 and 2101 each were taught by the same instructor for both the BGM® and control group; (2) pre and post-test design was implemented, (3) the statistical techniques for data analysis minimized the effects of preexisting differences in both anxiety levels and Chinese language performance. These advantages minimized the threats to internal validity, such as maturation as “individuals develop or change during the experiment (i.e., become wiser, stronger and more experienced)” (Creswell, 2012, p. 304). In this study, maturation was controlled by using the same pretest and posttest for same level (CHNS 1101 or CHNS 2101) groups. All participants from the same level matured or grew in a similar level for both the BGM® and control groups to mitigate the possible threat. In terms of the possible history threat (Fraenkel et al., 2011), there were no specific events identified so far associated with this threat. Finally, the
regression threat was controlled by discussing whether the scores from the data used not violate the normality for data analysis (Fraenkel et al., 2011).

**Generalizability.** According to Muijs (2011), in a quantitative research, investigators aims to generalize from the sample to the population. The researcher can calculate the probability (the cut-off point is less than 0.05) in order to conclude if the relationship observed from the studies would occur if there was no difference in the population. Fraenkel, Wallen, & Hyun, 2011 (2011) also defined the generalizability or external validity as applying the study results to the population that the sample represents. In this study, despite the small sample size of students, the sample represents 75% of elementary level Chinese language learners and 100% of intermediate level Chinese learners at this university.

In terms of population generalizability, since the enrollment in Chinese courses (CHNS 1101 & 2101) predated the study in the 2016 Fall and 2017 Spring semester, the researcher used convenience sampling, which is “a group of individuals who (conveniently) are available for study” (Fraenkel, Wallen, & Hyun, 2011, p. 99). The advantage of this sampling is its accessibility and convenience, since the researcher has been teaching Mandarin Chinese at this university since 2008. However, this type of sampling strategy was likely biased and weak on generalizability of any results since it is not random sampling of among Chinese language learners at this university. In order to mitigate this threat, the researcher included demographic information of the sample from the 2016 Fall and 2017 Spring semester with more reliable and comprehensive analysis to help readers decide if the results could be generalized to the population of their interest.

The goal of this study aims to evaluate the hypotheses and to generate the findings to the larger population of all college Chinese language learners in a large, urban private university.
However, ecological generalizability, defined as “the degree to which the results of a study can be extended to other settings or conditions” (Fraenkel, Wallen, & Hyun, 2011, p105) is limited. This innovative intervention (the BGM® practice) could be easily adapted by other language instructors into their curricula for improving student learning experience in the classroom. The results are expected to (a) add to the literature on efficacy of meditation in improving foreign language learning, and (b) inform efforts to build more effective foreign language or other compatible curriculum from a holistic approach that optimizes students’ learning while nurturing the whole person.

**Protection of Human Subjects**

Prior to this study, the permission from Institutional Review Board (IRB, see Appendix F) for conducting the study has been obtained. This research has undergone a full review because this study includes the BGM® practice as an intervention. To encourage students to participate the research, the researcher shared the research purpose and any risks with the potential participants. For instance, meditation practices are scientifically proven to be very safe.

An informed consent form states that the students participating in this research are completely voluntary. Students do not have to participate if they do not want to and students can refuse to answer any questions. Even if students begin the study, they may quit at any time. If they do not participate or if they decide to quit, they will not lose any rights, benefits, or services that they would otherwise have as students. The decision to participate or not to participate has no effect on students’ class standing either. Any questionnaires that student complete for the study are used for research purpose only and have no impact on student grades. The IRB approval includes a statement related to informed consent, and a copy of the certificate of approval issued by NU’s IRB Office.
To summarize, all participants are the students who sign the informed consent form and remain confidential. Any reports or publications based on this program evaluation research are used only group data and do not identify any individual as being of this study. Only the researcher on this study can see the information about the participants. All data was stored in the researcher’s computer with password protection. All paper forms collected were stored in a locked file cabinet in the researcher’s office at the research site and are destroyed at the full conclusion of the study.

Chapter Summary

Each of this study’s hypotheses were informed through the meticulous and thoughtful review of the selected theoretical framework and relevant previous research. Based on the outlined research questions and their hypotheses, a mixed quantitative and qualitative research methods approach was found to be most appropriate.

In the 2016 Fall and 2017 Spring semesters, a three-minute and a two-minute BGM® are respectively practiced at the beginning and the end of each lecture for one beginning and one intermediate level Chinese language courses (the cumulative practice time for each student was 210 minutes). The control group received the same Chinese language instruction without the BGM® practice. The outcomes of the BGM® were assessed by a quantitative method. The acceptability of the BGM® was investigated by a qualitative method using a questionnaire to gain the students’ perspectives. Student responses to each question were organized by themes.

While conducting the study, convenience sample was utilized in order to select student participants from the target population of intact classroom students in Beginning Chinese (CHNS 1101) and Intermediate Chinese (CHNS 2101) within the selected study site of a large unban, private university in Massachusetts. At the beginning of each semester, an introduction to the
study was given among the potential participants. This introduction briefly described the study and outlined issues surrounding participant confidentiality. Students who were interested in participating were instructed to review the PDF documents: a participant informational sheet which contained more in depth information regarding the study, such as the research purpose and any risks with the participants, and an informed consent document. The informed consent forms were signed by voluntary student participants.

Data collection occurred immediately following the first *Foreign Language Classroom Anxiety Scale* (FLCAS) measurement, which is a standardized, anxiety based assessment which was utilized to collect data on student classroom foreign language learning anxiety level, at the beginning of each course. On the last day of each course, students completed the post FLCAS measurement and the evaluation of the BGM® program by the aforementioned questionnaire. In order to calculate student academic progress, beginning of semester placement test and end of semester final test scores were also collected from both experimental groups and control groups. All data from the aforementioned measures were entered by a trained research assistant and then analyzed by the investigator. The baseline and post-intervention anxiety levels regarding foreign language learning were compared by a two-tailed, paired t-test for a within-group design. 2 (BGM® and Control) x 2 (baseline and post-intervention) ANCOVAs were also conducted to analyze the quantitative data regarding both foreign language classroom anxiety levels and Chinese language performance as a between group design. Alpha (α) was set at .05 for both the ANCOVA and t-test.

The perceptive data of the BGM® intervention (an open ended semi-structured questionnaire) among experimental group participants were collected at the end of each
semester. The responses from the participants’ feedback to the BGM® program were grouped conceptually to reflect similar emergent themes.

After data for all variables of interest were collected, data was cleansed, assumptions were checked, and selected statistical analyses were run. While designing and conducting the study, threats to validity, reliability, and generalizability were considered and steps were taken to reduce such threats. Finally, in order to protect the student participants from any potential harm, their confidentiality was ensured.
Chapter IV: Findings

The purpose of this study was to investigate the following three research questions (RQs).

1. What is the effect of the BGM® practice on undergraduate Chinese language learners’ anxiety levels?
2. What is the effect of the BGM® practice on undergraduate Chinese language learners’ academic performance?
3. What are the perceptions of the BGM® program among undergraduate Chinese language learners?

In this chapter research findings were reported and interpreted. First, demographic information related to student participants’ gender, age, Chinese language level, and family language background was reported. Next, the quantitative results were divided between results relevant to the effect of the BGM® practice on anxiety reduction (RQ1) and results pertaining to the effect of the BGM® practice on academic achievement (RQ2). For research question 1 (anxiety reduction), the two tailed, paired samples T-tests (a within group design), and then follow-up test of between-subjects effects (ANCOVA) were presented. For research question 2 (academic achievement), the test of between-subjects effect (a between group design) was reported and interpreted. Lastly, the acceptability of the BGM® was investigated by a qualitative method using a semi-structured questionnaire with open-ended questions to gain the students’ perspectives. Student responses to each question were organized by themes.

Data Cleansing

Several steps were taken in order to properly cleanse the data after it was entered into SPSS. First, data for each variable was reviewed to ensure there were no missing pieces of data and that acceptable values for the respective variable had been entered. Next, frequency
distributions were calculated to further assist in identifying missing data or data that was entered in correctly. In total there were 60 units of data (equivalent to the number of included students) entered into SPSS (see Appendix G). Both data review and frequency distributions indicated there is no pieces of data were missing or entered incorrectly for the variables of student foreign language classroom anxiety scores and Chinese language performance scores, student demographic data including gender, age, Chinese language level, family language backgrounds, and students’ feedback to the BGM® program.

**Assumption Checking**

**Foreign language classroom anxiety scale.** Anxiety levels were measured by a modified version of Horwitz’s Foreign Language Classroom Anxiety Scale (FLCAS) at the beginning and end of the courses. The FLCAS (Horwitz, 1986) has been validated as a measure of student foreign language classroom anxiety level. As indicating in the Figure 4.1 below, the current study also found evidence of adequate internal consistency (Cronbach’s alpha = .871) of the FLCAS as a measure of anxiety in the foreign language classroom, which meets the commonly accepted level of .70 posited by Muijs (2011).
Scale: ALL VARIABLES

Case Processing Summary

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid</td>
<td>60</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100.0</td>
</tr>
</tbody>
</table>

\(^a\) Listwise deletion based on all variables in the procedure.

Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.871</td>
<td>2</td>
</tr>
</tbody>
</table>

*Figure 4.1. FLCAS internal consistency (cronbach’s alpha)*

**Academic performance evaluation.** As discussed in Chapter 3, before parametric tests, such T-tests and ANCOVA, can be utilized, certain assumptions regarding data need to be met. If assumptions are not met and parametric tests are utilized, validity and power of the analyses are compromised (Hayes, 2013). The researcher used the Skewness data to check the assumption for the normality of anxiety levels and academic performance data. If the data violates the assumption of the normality, the researcher has to transform the skewed data by Logs (Log\(_{10}\)). The normal range of skewness is between 1.0 and -1.0, and parametric tests are robust against mild violations of assumptions. The results of assumption checking were outlined below (Figure 4.2). In terms of academic placement test, the skewness index is 0.27 while the final test
skewness index is -.044. On the other hand, the skewness index of pre anxiety levels is -.001 while the post data is 0.198. Thus all data set met the assumptions of parametric analyses (between 1.0 and -1.0).

![Descriptive Statistics Table]

<table>
<thead>
<tr>
<th></th>
<th>N Statistic</th>
<th>Minimum Statistic</th>
<th>Maximum Statistic</th>
<th>Mean Statistic</th>
<th>Std. Deviation Statistic</th>
<th>Skewness Statistic</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic1</td>
<td>60</td>
<td>.00</td>
<td>84.50</td>
<td>29.3000</td>
<td>31.25296</td>
<td>.272</td>
<td>.309</td>
</tr>
<tr>
<td>Academic2</td>
<td>60</td>
<td>61.00</td>
<td>100.00</td>
<td>85.1500</td>
<td>9.09195</td>
<td>-439</td>
<td>.309</td>
</tr>
<tr>
<td>Anxiety1</td>
<td>60</td>
<td>71.00</td>
<td>138.00</td>
<td>105.6167</td>
<td>14.08821</td>
<td>.001</td>
<td>.309</td>
</tr>
<tr>
<td>Anxiety2</td>
<td>60</td>
<td>81.00</td>
<td>158.00</td>
<td>113.7667</td>
<td>15.38034</td>
<td>.198</td>
<td>.309</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 4.2. Normality/Skewness of data sets*

**Demographics**

The study participants were compared on the following demographic characteristics: gender, age, Chinese language level, and family language background.

**Gender.** Participants included 60 undergraduate students, 29 female (48.3%) and 31 male (51.7%), who enrolled in Chinese language courses at a large urban university in the New England area. There was a relatively balanced male-female ratio (51.7% and 48.3%, respectively).

**Age.** As indicating in the Figure 4.3 below, the study participants fell into two age categories: (1) 18-22, and (2) 23-25. The most typical respondent age was in the 18-22 years range (93.3%) followed by 23-25 (6.7%). The age category of 18-22 represents the age range among typical college students.
Chinese language level. The sample consisted 60 participants accumulated over two semesters (see Table 4.1 for the number of students in each semester). Thirty one participants (17 from the beginning level and 14 from the intermediate level) had practiced the BGM® program for a one-semester period of time either in the 2016 Fall or in the 2017 Spring, while 29 participants were from the Chinese class sessions as matched control groups without the BGM® practice.

Table 4.1.

Experimental and Control Groups in Two Semesters

<table>
<thead>
<tr>
<th>Year/Semester</th>
<th>Chinese Class Session</th>
<th>Meditation (#)</th>
<th>Control (#)</th>
<th>Total (#)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016 Fall</td>
<td>CHNS 2101 (Intermediate I)</td>
<td>14</td>
<td>16</td>
<td>30</td>
</tr>
<tr>
<td>2017 Spring</td>
<td>CHNS 1101 (Beginning I)</td>
<td>17</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>Total (#)</td>
<td></td>
<td>31</td>
<td>29</td>
<td>60</td>
</tr>
</tbody>
</table>
Family language background. After approval by the Institutional Review Boards and obtaining consent from the students, two sections of Chinese language classes were assigned to the BGM® or the control group during the first week of class in the 2016 Fall and 2017 Spring semester respectively. More than 43% of the students were from English speaking background, while 35% from Non-Chinese Asian families, and only 13% of the students from other five language background groups (Cantonese – 6%, Non-Spanish European – 3%, Arabic – 3.3%, African – 1.7% and Spanish – 1.7%). Table 4.2 displayed the family language background of the 60 participants.

Table 4.2. Language Backgrounds of Participants

<table>
<thead>
<tr>
<th>Language spoken at home</th>
<th>English</th>
<th>Non-Chinese Asian Languages</th>
<th>Cantonese</th>
<th>Non-Spanish European Languages</th>
<th>Arabic</th>
<th>African</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency/Percent</td>
<td>26(43.3%)</td>
<td>21(35%)</td>
<td>6 (10.0%)</td>
<td>3(5.0%)</td>
<td>2(3.3%)</td>
<td>1(1.7%)</td>
<td>1(1.7%)</td>
</tr>
</tbody>
</table>

To summarize, the typical participants were between 18 and 25 years of age. In terms of the amount of participants, there was no significant difference between male and female. They were enrolled either in the beginning level or intermediate Chinese courses in the 2016 Fall or 2017 Spring semester. They were predominantly from English and Asian Language Speaking families.

Quantitative Findings

Quantitative results addressing RQ 1 (anxiety reduction). The outcome of anxiety reduction for the BGM® program was examined in the study with 31 college students who has practiced the BGM® program for a 14-week semester (2016 Fall or 2017 Spring), while the other
29 received the same Chinese instruction without the BGM\textsuperscript{®} practice (serving as control groups). The combined practice time was 210 minutes (5 minutes x 3 times per week x 14 weeks). The mean score of the FLCAS for the BGM\textsuperscript{®} group’s baseline was 105.81 (\textit{SD}=14.30), while the control group’s baselines were 105.41 (\textit{SD}=14.11). The final mean score of the BGM\textsuperscript{®} group was 118.16 (\textit{SD}=14.78), while the control group scored 109.07 (\textit{SD}=14.84).

First, as Table 4.3 and Figure 4.4 & 4.5 indicated below, results from two-tailed, paired samples T-tests (a within-group design) yielded a statistically significant intervention effect for the BGM\textsuperscript{®} group \( (t (30) = 8.28, p = .000) \) while not statistically significant for the control group \( (t (28) = 2.02, p = .053) \).

Table 4.3.

\textit{FLCAS Pre & Post Test Comparison (Paired Samples T-tests)}

<table>
<thead>
<tr>
<th>Groups</th>
<th>Baseline</th>
<th>Post-Intervention</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meditation</td>
<td>M= 105.81, SD = 14.30</td>
<td>M=118.16, SD=14.78</td>
<td>( p=.000 ) (( \alpha = .05 ))</td>
</tr>
<tr>
<td>(n = 31)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>M=105.41, SD=14.11</td>
<td>M=109.07, SD=14.84</td>
<td>( p=.053 ) (( \alpha = .05 ))</td>
</tr>
<tr>
<td>(n = 29)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textit{Figure 4.4.} Paired samples t-test for the BGM\textsuperscript{®} group
Figure 4.5. Paired samples t-test for the control group

Figure 4.6 presents a comparison between BGM® and control groups on pre and post-test scores of foreign language classroom anxiety levels.

Figure 4.6. Anxiety reduction comparison between groups

Secondly, as discussed in Chapter 3, in order to control the possible threat generated by maturation, a one-way ANCOVA was also used as a statistical method to control the initial difference of baseline levels, to analyze whether there is any significant difference between two groups, and to investigate the partial eta squared effect size ($\eta^2$).

Figure 4.7 shows the effects of one-semester BGM® on the students’ foreign language classroom anxiety reduction (n=60; 31 meditating and 29 non-meditating students). The Test of Between-Subjects Effects (ANCOVA) revealed a significant intervention effect ($F$ (1, 58) = 14.81, $p$ = .000, $\eta^2$ = 0.206). As Muijs (2011) suggests the effect size varies between 0 - 1 and is interpreted in the following way: “0-0.1 is a weak effect, 0.1-0.3 is a modest effect, 0.3-0.5 is a
moderate effect, and $> 0.5$ is a strong effect” (p. 183), the strength of the effect of the BGM® practice on anxiety reduction as an intervention was modest ($\eta^2 = .206$) even though there was a significant difference between the BGM® group and the control group in terms of the foreign language classroom anxiety reduction ($p = .000$).

<table>
<thead>
<tr>
<th>Tests of Between-Subjects Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
<td>Corrected Model</td>
</tr>
<tr>
<td>Intercept</td>
</tr>
<tr>
<td>Anxiety1</td>
</tr>
<tr>
<td>Group</td>
</tr>
<tr>
<td>Error</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Corrected Total</td>
</tr>
</tbody>
</table>

a. R Squared = .683 (Adjusted R Squared = .672)

*Figure 4.7. ANCOVA on anxiety reduction*

Additionally, in order to investigate any possible impact of gender, an analysis was conducted using ANCOVA. No significant difference was found between male (n=31) and female (n= 29) students [$F (1, 58) = 1.56, p = .216$] in terms of anxiety reduction after a one semester period of time (Figure 4.8).
Univariate Analysis of Variance

**Between-Subjects Factors**

<table>
<thead>
<tr>
<th>Value Label</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>31</td>
</tr>
<tr>
<td>Female</td>
<td>29</td>
</tr>
</tbody>
</table>

**Descriptive Statistics**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Anxiety2</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>116.7742</td>
<td>14.37755</td>
</tr>
<tr>
<td>Female</td>
<td>110.5517</td>
<td>16.00800</td>
</tr>
<tr>
<td>Total</td>
<td>113.7667</td>
<td>15.38034</td>
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**Tests of Between-Subjects Effects**

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<thead>
<tr>
<th>Source</th>
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<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
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<tbody>
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<td>44.792</td>
<td>.000</td>
<td>.611</td>
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<td>683.116</td>
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<td>.010</td>
<td>.112</td>
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<td>7949.467</td>
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<td>.594</td>
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<tr>
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<tr>
<td>Total</td>
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</tbody>
</table>

\(^a\) R Squared = .611 (Adjusted R Squared = .598)

**Figure 4.8. ANCOVA on gender (anxiety reduction)**

To summarize, in terms of research question results as to whether there is a significant difference in foreign language classroom anxiety levels, first, a paired sample T-test was conducted, and yielded a significant intervention effect from the BGM\(^\circ\) group with p-value of .000 whereas there was no significant effect observed from the control group with p-value of .053. The researcher also used ANCOVA to evaluate whether there was any significant difference between the BGM\(^\circ\) group and the control group. The data concluded there was a
significant difference observed between them (p < .001), however the effect size of the BGM® practice as an intervention is modest (η² = 0.206).

**Quantitative results addressing RQ2 (academic achievement).** Table 4.4 shows the effects of one-semester BGM® practice on the students’ Chinese language learning (n=60; 31 meditating and 29 non-meditating students). The average score of Chinese language skills at baseline level for the BGM® group was 23.65 (SD=28.65), with 35.35 (SD =33.25) for the control group. The average score of Chinese language skills at post-intervention for the BGM® group was 87.47 (SD=9.21), with 82.67 (SD= 8.43) for the control group. As Figure 4.9 below indicates, the Test of Between-Subjects Effects (ANCOVA) revealed a significant intervention effect (F (1, 58) = 4.10, p = .048) with a weak effect size (η² = .067). Figure 4.10 shows a comparison between the BGM® and the control group on pre and post-test scores of Chinese language performance.

Table 4.4.

**ANCOVA Tests of Academic Performance Comparison**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Baseline</th>
<th>Post-Intervention</th>
<th>Effect Size (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meditation (n =31)</td>
<td>M=23.65  SD=28.65*</td>
<td>M=87.47  SD= 9.21</td>
<td>( p = .048 )  ( \eta^2 = .067 )</td>
</tr>
<tr>
<td>Control (n =29)</td>
<td>M=35.35  SD =35.25*</td>
<td>M=82.67  SD= 8.43</td>
<td></td>
</tr>
</tbody>
</table>

* The CHIN 1101 group students’ baseline of 0 contributes to the large SD.

---

1 The CHIN 1101 group students’ baseline of 0 contributes to the large SD.
Additionally, in order to investigate any possible impact of gender, an analysis was conducted using ANCOVA. No significant difference was found between male (n=31) and female (n=29) students \([F (1,59) = .143, p = .707]\) in terms of academic achievement after a period of one semester time. (Figure 4.11).
Univariate Analysis of Variance

Between-Subjects Factors

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<th>Value Label</th>
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<td>Male</td>
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<tr>
<td>Female</td>
<td>29</td>
</tr>
</tbody>
</table>

Descriptive Statistics

<table>
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<tr>
<th>Gender</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>84.9355</td>
<td>9.24188</td>
<td>31</td>
</tr>
<tr>
<td>Female</td>
<td>85.3793</td>
<td>9.08654</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>85.1500</td>
<td>9.09195</td>
<td>60</td>
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</table>

Tests of Between-Subjects Effects

<table>
<thead>
<tr>
<th>Source</th>
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<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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<tr>
<td>Gender</td>
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<td>12.166</td>
<td>.143</td>
<td>.707</td>
<td>.003</td>
</tr>
<tr>
<td>Error</td>
<td>4845.709</td>
<td>57</td>
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<td>Corrected Total</td>
<td>4877.150</td>
<td>59</td>
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</tbody>
</table>

a. R Squared = .006 (Adjusted R Squared = -.028)

Figure 4.11. ANCOVA on gender (academic achievement)

To summarize, in terms of research question results as to whether there is a significant difference in foreign language academic achievement for the BGM® group as compared to the control group, there was a significant difference observed between them ($p = 0.048$), however the effect size of the BGM® practice as an intervention is weak ($\eta^2 = 0.067$).
Qualitative Findings: Research Question 3

Scale items frequencies analysis. This section provides the results of the descriptive frequency analysis of the items on the five survey sections including 11 questions, measuring the participants’ experiences of the BGM® program with anxiety reduction-, academic enhancement-, and their perception.

Anxiety reduction. The first section of the questionnaire asked questions related to whether the BGM® reduced foreign language classroom learning anxiety level. This section contained 3 questions. The first question (Q1) was measured on a 5-point rating scale from “very relaxed” to “less relaxed”. As Figure 4.12 below indicates, the majority of participants (45.2%) agreed that they felt somewhat relaxed, while 41.9% of the participants positively rated the effects of the BGM® practice as very relaxed. Only 12.9% of the participants chose options for “Same as before” (9.7%) or “Not Sure” (3.2%) rating. There were no negative responses as “less relaxed”.

Figure 4.12. How did you feel after the practice? (Q1)

The latter two questions (Q2 & Q3) of the first section were measured on a Yes/No/Maybe checklist. The participants shared the similar satisfaction pattern for the two questions. Almost sixty-eight percentage of participants provided the positive feedback, while
19.4% stated “Maybe”, and only 11.9% of the participants gave negative responses (See Figure 4.13).

![Figure 4.13. Effectiveness of meditation on the change of mindset (Q2-Q3)](Q2/Q3)
(Q2=Did you feel less anxious in your Chinese class after the meditation practice? Q3=Did you feel that your mind became clear after you practiced the bilingual guided meditation?)

**Academic enhancement.** The second section of the questionnaire asked questions related to whether the BGM® enhanced foreign language learning skills. This section contained two questions. The first question (Q4) is measured on a 5-point rating scale from “Very useful” to “Not useful at all” and provided data regarding to the enhancement of concentration ability in the Chinese classroom. As Figure 4.14 below indicates, the majority of participants (41.9%) agreed that they felt that the practice was very useful, while 38.7% of the participants positively rated the effects of the BGM® practice as somewhat useful. Only 19.4% of the participants chose the “Not sure” (9.7%) option. There were no “Not useful” response.
Figure 4.14. Concentration enhancement in the Chinese classroom

As shown in Figure 4.15 below, 52% of students answered “Yes” to Q5, with 42% responding “Maybe”, and only 6% of students answered “No.” Student responses to Q6 were 23% “Yes”, 35% “No” and 42% “Maybe”.

Figure 4.15. Effectiveness of meditation in-and outside of classroom learning (Q5-Q8)

Q5=Do you feel the anxiety reduction meditation technique affected your performance in your Chinese class. Q6=Do you feel any change in your life outside of Chinese class? Q7=Are you going to use the anxiety reduction meditation technique in the future? Q8=Would you recommend the use of the anxiety reduction meditation techniques to your friends?
When responding to Q7, 58% of students stated that they would continue to use the BGM® in the future, while 26% were unsure, and 16% answered “no.” In response to Q8, 87% of participants stated they would recommend the use of the anxiety reducing meditation techniques to their friends, while only 3% of students answered “no” and 10% of students stated unsure.

When asked to further elaborate regarding Q6, 11 students provided elaborations. The following are a few examples:

- “I feel more able to try new things after seeing that Chinese is not as scary as people make it seem.”
- “It has taught me how to calm my mind, and I become less insomnia.”
- “Getting to know this beautiful language makes me really happy, and speaking Chinese with my Chinese friends helps me bond with them.”

**Feedback regarding structure/delivery of BGM®.** The researcher asked the question: “Which element of BGM® program did you like most?” (Q9b). Twenty-six percent of the participants credited the bilingual format as most helpful, 23% preferred the positive suggestion input, 29% felt the soothing background music was the most important element for BGM®, while 22% liked the guided meditation itself (Figure 4.16). One student made an additional comment, by summarizing as: “guided meditation helps format the meditation. Music helps steady breathing and clear mind. Bilingual format is nice to hear instructions in both languages.”
The researcher also asked: “Which version of meditation (BGM®) do you feel is most effective and helpful?” (Q10). Fifty-two percent of the participants liked both of them equally. Thirty-five percent of the participants liked the beginning of class BGM® more, while 13% preferred the end of class BGM® (Figure 4.17). One participant provided an additional comment, by stating: “We need to begin relaxed in order to fully absorb the material and end relaxed as well in order to feel comfortable about the lesson learned.”

The final survey question asked for any additional comments, responses were positive as students showed appreciation and encouragement for the continuation of BGM® in their Chinese
classes, as one student said: “I liked this practice, it helps focus the class, settle down the students”. Two students recognized the original intention for this program of helping students instill their learning into the subconscious, as they stated: “It successfully goes into my mind.” and “every time I heard it I would subconsciously know the meaning, drilling it further in my head.”

**Thematic coding.** The thematic coding method was used by the researcher to identify overall themes of participants’ responses (Saldaña, 2016). In the initial thematic coding process, the researcher followed the suggested methods by reading through each response and identifying a key word or phrase that described the content of the response. Once the data were initially coded, all codes were placed in one column of a common spreadsheet for each question. This visual representation allowed another venue for the researcher to further examine the data, and identify emerging themes. This exploration has gained insight into the assessment and attitude data on the experience of BGM® courses from the students’ perspective. Most students responded positively since they agreed that the use of BGM® facilitates a more positive classroom environment.

Fifty-two percent of the comments on the presentation of BGM® reported similar key words of “great, good, nice, fine, well, etc.” 29% of comments also praised BGM® with being “effective, useful, practical, helpful, etc.” Another 19% complimented the practice by saying the experience was “positive, fun, interesting, enjoyable, excellent, etc.”

Students have also expressed appreciation for incorporating BGM® into their Chinese courses. Eleven students indicated much of the effectiveness of BGM® was due to being presented at the beginning of class, which made the participants more receptive to learning. Students encouraged the continuation of BGM® as part of their Chinese learning experience.
Students provided comments regarding the effectiveness of the BGM®. Among these comments, the researcher has identified three themes indicated in Table 4.5 below.

Table 4.5.

Student Comments on the Effectiveness of Meditation in their Chinese Class

<table>
<thead>
<tr>
<th>Theme</th>
<th>Percentage of Student Comments with this theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students reporting greater relaxation, calmness, and stress/anxiety reduction.</td>
<td>Total: 46.6%</td>
</tr>
<tr>
<td></td>
<td>• Greater relaxation: 42.9%</td>
</tr>
<tr>
<td></td>
<td>• Greater Calmness: 33.3%</td>
</tr>
<tr>
<td></td>
<td>• Stress Reduction: 14.3%</td>
</tr>
<tr>
<td></td>
<td>• Anxiety Reduction: 9.5%</td>
</tr>
<tr>
<td>2. Students Reporting More Confidence in their Chinese Class Performance</td>
<td>13.6%</td>
</tr>
<tr>
<td>3. Students Reporting Enhanced Learning Abilities in the Chinese Classroom</td>
<td>Total: 39.8%</td>
</tr>
<tr>
<td></td>
<td>• Learning ability (Speaking, Pronunciation, Listening, etc.): 51.2%</td>
</tr>
<tr>
<td></td>
<td>• Concentration ability (Centering, Focus, Clear Mind, etc.): 48.8%</td>
</tr>
</tbody>
</table>

**Theme 1: greater relaxation, calmness, and stress/anxiety reduction.** Almost forty-three percent of the comments included “feeling more relaxed” after meditation, while 33.3% used a synonymous “calmer” in their responses. One student reported, “Taking the time to meditate before class allowed me to clear my mind, destress, and prepare to enter the right mindset to best learn and apply myself in class.” while another said “I usually show up to class stressed from either running later or rushing from my last class so having a moment to clear my head is nice.” Another 14.3% reported stress reduction, and 9.5% anxiety reduction. Another student stated
“Made me less nervous about the lessons and less scared to speak Chinese.” In total, out of all student comments, 46.6% reflected this theme. Additional comments included:

- “Excellent, provided a relaxed environment to learn a challenging language.”
- “It helps me to calm down and less sleepy during lesson.”
- “Helps me focus on just Chinese and stop thinking about other things stressing me out.”
- “It reduces the amount of sleepiness during class.”
- “Provides stress-free environment which is important because Chinese can be a very difficult language to learn and this makes it easier.”

**Theme 2: more confidence in their Chinese class performance.** Over thirteen percent of the student comments reflected that they felt more confident in their abilities in the classroom as a result of meditation. One student stated “I thought that the guided meditation was extremely helpful and made me feel more confident and relaxed. I looked forward to it.” Another participant said: “Helped me to be calmer and more confident in my answers. Reminded me to take a few seconds and think.”

**Theme 3: enhanced learning and concentration abilities in the Chinese classroom.** Twenty-eight percent of students observed visible changes in terms of academic performance in their Chinese class. Within these comments, 51.2% reported improved learning ability including speaking, pronunciation, and listening skills, etc. Another 48.8% indicated enhanced concentration ability in regards to focus and clear mind. Comments included:

- “I think it helped me more into the ambience of speaking Chinese.”
- “I think it positively impacts performance as afterwards I feel myself more focused and alert.”
- “I like it because I was able to practice my Chinese as I followed along.”
- “At the class progressed, I learned many of the words and gradually I understand about ½ of the Chinese.”
• “By going back and forth between two languages, students are able to learn (in my case) more about different cultures. If it weren’t for the bilingual meditation, I wouldn’t have known that ‘qing song’ is ‘relaxed’ I think it is super effective, personally.”

Chapter Summary

The purpose of this study was to investigate the impact of the BGM® program on college-level learners of Chinese language in classroom settings. The researcher conducted a mixed methods study with specific aims: (1) to assess its outcomes in terms of reducing anxiety and enhancing Chinese language learning (RQ1 & RQ2), and (2) to evaluate the acceptability of the BGM® in foreign language classrooms (RQ3). To help answer these questions, FLACS anxiety levels and Chinse language performance scores were collected from student participants in the study at the beginning and end of the 2016 Fall and 2017 Spring semester respectively. The baseline and post-intervention anxiety levels regarding foreign language learning were compared by a two-tailed, paired samples T-test as a within-group design. A 2 (BGM® and Control) x 2 (base line and post-intervention scores) ANCOVA was also conducted to analyze the quantitative data regarding both foreign language learning anxiety levels and foreign language performance. Alpha (α) was set at .05 for both the t-test and ANCOVA (Muijs, 2011).

Quantitative results revealed there were significant interventional difference between the BGM® group and the control group in terms of anxiety reduction and language achievement. However, the effect size of the BGM® practice as an intervention is either modest (anxiety reduction) or weak (academic enhancement). Meanwhile, the responses from the participants’ feedback to the BGM® program were grouped conceptually to reflect similar emergent themes. Analyses of student responses to the questionnaire identified three overarching themes of the BGM® practice as the intervention: 1) Greater relaxation, calmness, and stress/anxiety reduction; 2) More confidence in their Chinese language class performance, and 3) Enhanced learning and concentration abilities in the Chinese classroom.
Chapter V: Discussion of Researching Findings

“The reserves (unused potential capacity) of the human brain/mind and the way to reach these reserves safely were and still are my great dream…I did what I could. I hope that the future generations follow in our steps…”

(Dr. Georgi Lozanov, founder of Suggestopedia & Reservopedia)

The purpose of this study was to assess the outcomes of the BGM® practice in terms of reducing anxiety and enhancing Chinese language learning as well as to evaluate its acceptability in foreign language classroom among college learners. This chapter consists of four major sections in order to systematically discuss and thoroughly interpret research findings. The first section outlines research findings and interprets them as relating to previous research as well as the selected theoretical framework. In the second section, implications of research findings are discussed in regard to the areas of theory, research, and practice. The third section explores and discusses limitations of the study. In the last section, suggestions of future research are explored. The chapter closes with a thoughtful conclusion.

Study Overview

As the world becomes more and more interconnected, the importance of acquisition of a foreign language is widely recognized. Currently, more than 1.6 million American college students study at least one foreign language. Chinese is one of seven most popular foreign languages to study, with over 61,000 undergraduates braving this challenging course in 2013. But the high level of anxiety that often accompanies foreign language learning not only has a negative impact on language skill acquisition, it’s one of major reasons for a large number of students to give up their foreign language learning. The Modern Language Association recently released a report on its 2013 study that revealed a 6.7% drop in enrollment in foreign language
classes in American colleges and universities since 2009. News media such as the Washington Post attribute this decline to a variety of factors, but the title of a recent blog post speaks volumes: “Americans Are Beginning to Lose Their Love for Foreign Languages.” How can evidence based educators stem the tide of this trend?

In order to answer this call and enrich the literature, the current study examined acceptability and outcomes of an innovative teaching approach, bilingual guided meditation (BGM®), in the college foreign language classroom. The approach included the BGM® program in the classroom to reduce college students’ anxiety while learning a foreign language and to optimize foreign language learning in a relaxed and positive mindset.

The Bilingual Guided Meditation (BGM®) program, which is novel in its combination of bilingually positive suggestion input with the benefits of guided meditation, and relaxing background music, has been incorporated into foreign language classroom settings at Northeastern University during the 2016 Fall and 2017 Spring semester.

Using both quantitative and qualitative methods, this research study explored the effects of the BGM® practice on foreign language classroom anxiety reduction and academic enhancement among the college students to answer the overarching research question. The specific research questions that guided this study were:

**Overarching research question.** What is the effect of the BGM® practice on foreign language classroom anxiety level and academic performance among Chinese learners in a large, urban private university in the United States?

**Sub-questions.** 1) What is the effect of BGM® practice on undergraduate Chinese language learners’ anxiety level? 2) What is the effect of BGM® practice on undergraduate
Chinese language learners’ academic performance? 3) What are the perceptions of BGM®
program among Chinese language learners?

**Primary directional hypotheses.** 1) BMG® Practices reduce the stress levels of college
students in learning a foreign language. 2) BGM® Practices enhance foreign language learning
performance.

**Results and Discussion of Research Questions**

**Research question 1 & 2 and corresponding hypotheses.** Overarching research
question asked, “What is the effect of the BMG practice on foreign language classroom anxiety
level and academic performance among Chinese learners in a large, urban private university in
the United States”? Under this overarching research question, in terms of research question
1(anxiety reduction) and 2(academic enhancement), results from both two tailed, paired samples
T-tests and ANCOVA analysis indicated: 1) there was a significant anxiety reduction between
the pre and post-test within the BGM® group ($p = .000$), while there was no significant anxiety
reduction available within the control group ($p = .053$), and 2) there were significant
interventional differences between the BGM® group and the control group, even though the
effect sizes of the BGM® practice as an intervention is either modest (anxiety reduction: $p = .000$,
$\eta^2 = .206$) or weak (academic enhancement: $p = .048$, $\eta^2 = .067$). Therefore, the corresponding
hypotheses, which predicted positive relationships between the variables (BGM® & anxiety
reduction; BGM® & academic enhancement), were supported.

While previous empirical research on contemplative education regarding to general well-
being and academic performance, with a control group, remains in its infancy (Albrecht et al.,
2012; Craig, 2011), this finding supports the results of previous research, which has found that
meditation practice has significant effects on reducing stress/anxiety levels (Edwards, 1991;
Miller, Fletcher & Kabat-Zinn, 1995; Shapiro & Walsh, 2003; Tate, 1994), as well as improving school grades, learning ability, and short- and long-term recall (Moore, 1992; Shapiro, Brown & Astin, 2011; So & Orme-Johnson, 2001; Schlesiger, 1996; Tloczynski & Tantriella, 1998)). Further, the finding aligns with expected outcomes based on the theoretical framework of Suggestopedia theory, founded by Georgi Lozanov (1978, 2009). Suggestopedia theory would predict that the appropriate incorporation of three essences (music, relaxation, and positive suggestion), which the BGM® program does, may generate positive results to reduce the anxiety levels and enhance foreign language learning.

Even though the quantitative findings indicated that there were a significant intervention differences for both anxiety reduction and academic enhancement between the BGM® group and control group, both effect sizes are not moderate or strong, but rather modest (anxiety reduction) or weak (academic enhancement). One potential explanation for the modest or weak effect size is the small sample size of student participants. Since this was a controlled study, due to the limited number of students enrolled in the Chinese language course in the CHNS 1101 (2017 Spring) and CHNS 2101 (2016 Fall), there were only 60 participants available for the BGM® courses (n=31) matched with the control courses (n=29), receiving the same Chinese language instruction without the BGM® practice. Thus, the small participant sample size most likely reduced statistical power which led to weak or modest effect sizes (Vogt, 2007).

Overall, while the effect sizes of the BGM® practice as an intervention were not strong, the statistically significant interventional differences between the BGM® group and the control group in terms of anxiety reduction and academic enhancement indicated that the hypotheses corresponding to the overarching research question including RQ1 and RQ2 were supported respectively.
Research question 3: acceptability of the BGM® program. Research question 3 asked, “What are the perceptions of BGM® program among Chinese language learners”? After scale items frequencies analyses of a semi-structure, open-ended questionnaire as well as qualitative questionnaire analyses, three important themes emerged that described the perceptions of BGM® practice among Chinese language learners.

Themes described by students relating to the benefits of the BGM® practice included the following: (1) greater relaxation, calmness, and stress/anxiety reduction; (2) more confidence in their Chinese class performance; (3) enhanced learning (pronunciation, speaking, and listening) and concentration abilities in the Chinese classroom.

The sub-themes described by students indicating whether the BGM® practice reduces the foreign language classroom anxiety levels included the following: (1) greater relaxation; (2) greater calmness; (3) stress/anxiety reduction. These three enhanced capacities facilitate to reduce foreign language learning anxiety levels. Both the foreign language learning anxiety reduction and enhancement of concentration and learning ability contribute to improved academic performance based on students' self-reports.

Most students responded positively to the use the BGM® practice, facilitating a more receptive learning environment. Students have shown appreciation and encouraged the continuation of BGM® practice as part of their Chinese learning experience.

Implications of Findings

This study aimed to examine the preliminary outcomes and acceptability of an innovative teaching approach, which included the BGM® practice in the classroom to reduce college students’ anxiety while learning a foreign language and to optimize foreign language learning in
a relaxed and positive mindset. The following section discusses the implications of this study’s finding as they relate to theory, research, and practice.

**Implication for theory.** First, the preliminary quantitative data from pre and post-test scored on FLCAS and Chinese language performance indicated that BGM® has positive effects on both anxiety reduction \( (p = .000) \) and foreign language learning \( (p = .048) \), compared to the control group. The findings supported the hypotheses of significant and positive relationships between the BGM® practice & anxiety reduction, and the BGM® program & academic achievement. Similarly, findings also supported the Suggestopedia theory which purport that the appropriate incorporation of all three essences (music, relaxation, and positive suggestion) into foreign language acquisition can very possibly generate positive results to reduce the anxiety levels and accelerate foreign language learning (Lozanov, 1978, 2009). Further, findings related to the first and second sub-questions are the first to investigate and provide empirical evidence that the BGM® program, as an innovative teaching approach, enhances anxiety reduction and academic performance, compared to a control group. Future research will assist in more thoroughly assessing the relationship between anxiety reduction and academic achievement how they fit into the Suggestopedia theory.

Secondly, the qualitative data from this preliminary exploration also indicated that the BGM® was acceptable to the participating students. Most students responded positively to the course, perhaps since the BGM® is designed to facilitate a more positive classroom environment. Students have also expressed appreciation for incorporating BGM® into their Chinese courses. Some participants indicated much of the effectiveness of the BGM® was due to it being presented at the beginning of class, which made the participants more receptive to learning. The background music was also noted by participants to be soothing and helped them become more
relaxed in the classroom environment. Of further note, the students encouraged the continuation of BGM\textsuperscript{®} as part of their Chinese learning experience. Future research will assist in more thoroughly assessing the effects of the three major essences of Suggesopedia (music, relaxation, and positive suggestion) on student performance respectively, as well as the relationship between anxiety reduction and academic achievement, and how they fit into the Suggestopedia theory.

**Implication for research.** Based on the literature (Bancroft, 1999; MaCown et al., 2011; Shapiro & Walsh, 2003; So & Orme-Johnson, 2001; Zhao, 2008) and results from the current study, the researcher proposed the following model for understanding how these intervention effects were generated from the BGM\textsuperscript{®} practice which integrates a meditative practice with curriculum subjects (foreign language courses). In this framework, the researcher posited that the relaxation state and positive mindset induced by the BGM\textsuperscript{®} program appears central to facilitating the reduction of academic anxiety and enhancing foreign language learning among college Chinese learners. Figure 5.1 illustrates the proposed pathways.
Figure 5.1. Model of potential BGM® effects.

The findings from this study supported the call for incorporating all human dimensions into learning and inquiry (Ferrer et al., 2010). The findings indicated that BGM® is a promising approach to address nonacademic dimensions in a foreign language classroom. Furthermore, incorporating BGM® optimizes the participating students’ learning of Chinese language. Meanwhile, it should be noted that there were 6% of the participants who did not believe that BGM® affected their Chinese language performance and 3% of the participants did not
recommend the use of the BGM® to their friends. These findings warrant caution when applying the BGM® to all students in a class.

Similarly, even though findings related to the overarching research question assisted in further solidifying the significant and positive relationship between the BGM® practice, general wellbeing, and academic performance, the effect size of the BGM® practice as an intervention is either modest (anxiety reduction: $\eta^2 = .206$) or weak (academic achievement: $\eta^2 = .067$). The small sample size from this study may have impact the statistical results. As future researchers are able to attain larger sample size in different settings, subjects with different age groups and different teachers, the statistical power will increase and the efficacy of the BGM® program will become clearer as well.

**Implication for practice.** The investigation of the relationship between contemplative practices, general well-being, and academic performance remains in its infancy. As such, current education practice does not prioritize the collection and evaluation of the incorporation of contemplative techniques with curriculum subjects. Therefore, the findings of this pilot study provides a practical tool to offer other interested educators another option to create a nurturing learning environment and promote varying degree of wellness outcomes in student population. Moreover, besides being a psychological well-being intervention, the BGM® practice could also be easily adapted by other language instructors into their curricula and enrich their course design.

Further, over the duration of the two semesters of BGM® practice, students have been an active part of this BGM® program’s refinement through their informal feedback, support and enjoyment of the practice. One student commented “I liked the enthusiasm behind it”. They also suggested dimming the lights to make the practice more effective. Language and ritual from the BGM® practice also became integrated into the students’ class engagement. For example, after
practicing for some time, student in the beginning Chinese courses started to greet the teach with “qing qing de (gently)” opposed to “nihao (hello)”. “Qing qing de” is the opening line of the BGM® practice, and is a higher level phrase than what is typically expected at their proficiency level (beginners). The students automatically reminded the teacher to have the class practice BGM® by saying “qing qing de” as well. At the end of the semester, students in the control group often concluded the final exam with a simple “goodbye” to the teacher, whereas the students in the BGM® group often approached the teacher with a big hug and positive sentiments. Although anecdotal, it appeared that the BGM® practice were conducive to develop a closer bond between the students and their teacher. Overall, the additional positive comments from the student participants are very encouraging. (See Appendix H).

Limitations of the Study

This research study was built on a well-established theory of Suggestopedia and the benefits of meditation practices based on literature review. Moreover, the study threats to validity, reliability and generalizability were carefully considered and several steps to reduce such threats were taken. However, several limitations of the current study should still be noted.

First of all, even though findings related to the overarching research question revealed significant and positive relationships between the BGM® practice, general wellbeing, and academic performance, the effect size of the BGM® practice as an intervention is either modest (anxiety reduction: \( \eta^2 = .206 \)) or weak (academic achievement: \( \eta^2 = .067 \)), the small sample size from this study may have impact the statistical results.

In addition, due to limitations with the small sample size, some theoretically related outcome measures were not assessed, including teacher ratings of behavior, student attendance,
oral communication performance, and the mediation between anxiety reduction in foreign language learning and performance on foreign language skills.

Moreover, even though the feedback of the BGM® is anonymous, the student self-report measure of the BGM® program administered in this study may be influenced by the students’ desire to make a favorable impression with the researcher. Some survey items involved researcher’s preferences as well. Additional refinement and measures should be used to address these issues in future studies.

Finally, generalizability of findings in this study are limited based on the setting of the study as well as the population under investigation. Participants in this study were selected from a large, urban private university in Massachusetts. It is likely that results of this study will generalize to other urban private colleges in Massachusetts as the geographic location, teacher characteristics, and student characteristics related to age, ethnic diversity, home language, Chinese language levels, and etc., will likely be similar. However, due to this study’s limited setting and student population, research findings should be analyzed carefully and responsibly before applying them to other location and populations.

Areas of Further Research

The Bilingual Guided Meditation (BGM®) program, which is novel in its combination of bilingually positive suggestion input with the benefits of guided meditation, and relaxing background music, has been incorporated into foreign language classroom settings at Northeastern University during the 2016 Fall and 2017 Spring semester.

First of all, in order to mitigate any significant threat to internal validity, as Fraenkel, Wallen, & Hyun (2011) suggested, the future studies should recruit “a number of similar samples to decrease the likelihood that the results obtained were simply a one-time occurrence” (p. 100).
Thus, next steps for this research should involve exploring other options for increasing sample size, and exploring the possible mediation effect between anxiety reduction and academic enhancement with a larger sample and more classrooms (such as incorporating BGM® practice in ESL, Portuguese, and other language courses).

Moreover, future research should assist in more thoroughly assessing the effects of the three major essences (music, relaxation, and positive suggestion) of Suggesopedia on the intervention effects respectively. Further, as the rationality and justification of Suggestopedia theory was discussed in Chapter II, these three essences induce a state of relaxation and positive mindset. In the process of guided meditation practice, students can easily enter the relaxation state. Meanwhile, the relaxing background music is intended to activate the right brain hemisphere. Under this kind of ideal learning environment, it is highly possible for bilingual language input involving positive suggestion to have a great subconscious effect to tap into the reserved potentials. In this current study, based on students’ self-report data generated from the semi-structured questionnaire, the activation of these three elements reducing anxiety levels, enhancing concentration & learning ability has been supported, the future research should investigate how the appropriate incorporation of the three essences has a great subconscious effect to tap into the reserved potentials via activating the right brain hemisphere (See Figure 5.2 below on the proposed future exploration of subconscious effects below).
To sum up, in terms of the next phases of the research, through collecting more data via a bigger sample size, the investigators will be able to have a better understanding of the impact of anxiety reduction on the academic learning and academic progress of the students. Once having more data, the investigators can conduct a mediation analysis. It will help to study the moderated influence of how lower levels of anxiety lead to receiving more knowledge and making more progress in the course of mastering a foreign language.

**Conclusion**

Despite the limitations, the present study was the first controlled trial of a classroom-based bilingual guided meditation intervention for college foreign language learners. The
findings suggest that the BGM® intervention (1) shows promise in reducing foreign language classroom learning anxiety, and (2) had the potential of facilitating a range of positive academic outcomes, and (3) is acceptable to participants in university settings and is likely to be attractive to students. This initial study provides some support for building more effective college foreign language or other compatible curricula from a holistic approach that optimizes students’ learning while nurturing their wellbeing.

Since an increasing number of schools are searching for innovative ways to meet the academic, social-emotional, and behavioral needs of students (Wisner, Jones & Gwin, 2010), the findings of this pilot study provide a practical tool to help educators create a nurturing learning environment from a holistic approach, which optimizes student academic performance and promotes varying degrees of wellness outcomes in student populations. The BGM® program could also be easily adapted by other language instructors into their curricula for improving student learning experience in the classroom and enriching their course design.

The holistic approach to teaching aims to improve students’ learning through nurturing a relaxed and positive mindset by incorporating a contemplative technique – BGM® with curriculum subjects. Hopefully, more and more evidence based educators will create more initiatives to nurture students in a holistic environment, while effectively teaching any relevant subjects. Through these initiatives, students can tap into their reserved potentials and ignite their learning passion to become lifelong learners. More importantly, they can share these nurturing characteristics in their future endeavors, and with any possible encounters. Even though this BGM® approach begins with one individual, in one classroom, in one university, but the effects can ripple into something much greater than imaged. The researcher sincerely wishes that the soft melody from our hearts can join with the collective choir of the growing development during
this crucial turning point, and these collective endeavors can help the world become more
connected, and the people reach a higher level of consciousness that promotes the well-being of
all.
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APPENDIX A

3-Minute Bilingual Guided Meditation (beginning of class) Script

Part 1:

1) Gently close your eyes.

轻轻地闭上你的眼睛

2) Enjoy the flow of the music for a few minutes

在接下来的几分钟里，享受美好的音乐。

3) The music will relax your body and mind.

这段音乐会帮助你放松你的身体和头脑。

Part 2:

4) Now your body is relaxed and your mind is alert.

现在你的身体已经完全放松，你的头脑变的非常清晰。

5) We are going to start our Chinese learning.

我们马上就要开始我们的汉语学习了。

6) Our Chinese learning will be interesting and easy

汉语学习很有意思也很容易。

7) In this class you will naturally begin tapping into your reserved potentials.

在这堂课里，你会自然地开启你的潜能。

8) We will have a joyful learning time together today.

今天我们会有愉快的学习时光。

9) Now gently open your eyes.

现在轻轻地睁开你的眼睛。
APPENDIX B

2-Minute Bilingual Guided Meditation (end of class) Script

Part 1:

1. Gently close your eyes,
轻轻地闭上你的眼睛；

2. Enjoy the flow of the music for two minutes.
在接下来的两分钟里，享受美好的音乐。

3. The music will relax your body and mind.
这段音乐会帮助你放松你的身体和头脑。

Part 2:

4. Now your body is relaxed and your mind is alert.
现在你的身体已经完全放松了，你的头脑变得非常清晰。

5. We are going to complete our Chinese learning today.
我们马上就要完成我们的今天汉语学习了。

6. Our Chinese learning is interesting and easy
汉语学习很有意思也很容易。

7. What you have learned today will naturally stay in your mind.
今天你学的汉语会自然地留在你的头脑里。

8. We are looking forward to our next happy Chinese learning.
我们期待下一次愉快的学习时光。

9. Now gently open your eyes, and quietly leave the classroom
现在轻轻地睁开你的眼睛，安静地离开教室。
APPENDIX C

FOREIGN LANGUAGE CLASSROOM ANXIETY SCALE*

Directions: For each statement, please indicate whether you (1) strongly agree (SA), (2) agree (A), (3) neither agree nor disagree (N), (4) disagree (D), or (5) strongly disagree (SD).

Please give your first reaction and circle an answer for every statement.

1. I never feel quite sure of myself when I am speaking in my Chinese class.
   SA  A  N  D  SD

2. I don’t worry about making mistakes in Chinese class.
   SA  A  N  D  SD

3. I tremble when I know that I’m going to be called on in Chinese class.
   SA  A  N  D  SD

4. It frightens me when I don’t understand what the teacher is saying in Chinese class.
   SA  A  N  D  SD

5. It wouldn’t bother me at all to take more Chinese classes.
   SA  A  N  D  SD

6. During Chinese class, I find myself thinking about things that have nothing to do with the course.
   SA  A  N  D  SD

7. I keep thinking that the other students are better at Chinese than I am.
   SA  A  N  D  SD

8. I am usually at ease during tests in my Chinese class.
9. I start to panic when I have to speak without preparation in Chinese class.

10. I worry about the consequences of failing my Chinese class.

11. I don’t understand why some people get so upset over Chinese class.

12. In Chinese class, I can get so nervous I forget things I know.

13. It embarrasses me to volunteer answers in my Chinese class.

14. I would not be nervous speaking Chinese with native Chinese speakers.

15. I get upset when I don’t understand what the teacher is correcting.

16. Even if I am well prepared for Chinese class, I feel anxious about it.

17. I often feel like not going to Chinese class.

18. I feel confident when I speak in Chinese class.

19. I am afraid that my Chinese teacher is ready to correct every mistake I make.
20. I can feel my heart pounding when I’m going to be called on in Chinese class.
   SA A N D SD

21. The more I study for a Chinese test, the more confused I get.
   SA A N D SD

22. I don’t feel pressure to prepare very well for Chinese class.
   SA A N D SD

23. I always feel that the other students speak Chinese better than I do.
   SA A N D SD

24. I feel very self-conscious about speaking Chinese in front of other students.
   SA A N D SD

25. Chinese class moves so quickly I worry about getting left behind.
   SA A N D SD

26. I feel more tense and nervous in my Chinese class than in my other classes.
   SA A N D SD

27. I get nervous and confused when I am speaking in my Chinese class.
   SA A N D SD

28. When I’m on my way to Chinese class, I feel very sure and relaxed.
   SA A N D SD

29. I get nervous when I don’t understand every word the Chinese teacher says.
   SA A N D SD

30. I feel overwhelmed by the number of rules you have to learn to speak Chinese.
   SA A N D SD

31. I am afraid that the other students will laugh at me when I speak Chinese.
32. I would probably feel comfortable around native speakers of Chinese.

33. I get nervous when the Chinese teacher asks questions which I haven’t prepared in advance.

APPENDIX D

Feedback to the Bilingual Guided Meditation Practice in the Classroom

This questionnaire asks how you feel about Bilingual Guided Meditation (BGM®) in the classroom. Your feedback is very important to us. Please answer all the 12 questions below.

Thanks.

1) How did you feel after you practiced the bilingual guided meditation (BGM®)?
   ___ Very relaxed  ___ Somewhat relaxed  ___ Same as before  ___ Not sure  ___ Less relaxed

2) Did you feel that your mind became clear after the BGM® practice?
   ___ Yes  ___ No  ___ Maybe

3) Did you feel less anxious in your Chinese class?
   ___ Yes  ___ No  ___ Maybe

4) Did you feel the BGM® practice useful to enhance your concentration ability in your Chinese classroom?
   ___ Very useful  ___ Somewhat useful  ___ Not sure  ___ Not useful

5) Did you feel the anxiety reduction meditation technique affected your performance in your Chinese class?  ___ Yes  ___ No  ___ Not sure
   If yes, in which way?
6) Did you feel any change in your life outside of Chinese class as a result of the BGM® practice?
   __Yes  __No  ___Maybe  
   If yes, in which way?

7) Are you going to use the anxiety reduction meditation technique in your life in the future?
   __Yes  __No  ___Not sure

8) Would you recommend the use of the anxiety reduction meditation technique to your friends?
   __Yes  __No  ___Maybe

9) a. What did you think about the way the bilingual guided meditation was presented?

   b. Which elements did you like most (place them in order of 1, 2, 3, 4: 1 is most like, 4 is least like)?
___ bilingual format ___ positive suggestion input ___ music, ___ guided meditation

Why?

______________________________________________________________________________________

10) Which BGM® version did you feel most effective and helpful?

_____ Beginning of class BGM®  _____ End of Class BGM®  ____ Both  ____ Neither One

Why?

______________________________________________________________________________________

11) Any other comments?

______________________________________________________________________________________

12) Demographic Info:

Age: ________________

Gender: ________________

Language spoken at home (parents): ________________________
Permission to use the FLCAS

Horwitz, Elaine K <horwitz@austin.utexas.edu> to Qinhong

2/3/15

It's nice to meet you, and I appreciate your interest in my work. There is a lot of material on the reliability and validity of the FLCAS. I am attaching the 2 original articles. Subject to the usual requirements for acknowledgment, I am pleased to grant you permission to use the Foreign Language Classroom Anxiety Scale in your research. Specifically, you must acknowledge my authorship of the FLCAS in any oral or written reports of your research. I also request that you inform me of your findings. Some scoring information about the FLCAS can be found in my book Becoming a Language Teacher: A Practical Guide to Second Language Learning and Teaching, 2nd edition, Pearson, 2013.

Best wishes,

Elaine Horwitz
APPENDIX F: IRB APPROVAL

Northeastern

NOTIFICATION OF IRB ACTION
RENEWAL APPROVAL

Date: August 2, 2016
IRB #: 13-07-17
Principal Investigator(s): Chieh Li
Applied Education
Bouvé College of Health Sciences
404 International Village
Qinghong Cai
World Languages Center
College of Professional Studies
11 Balvidere

Title of Project: Bilingual Guided Meditation Practice Program: Academic Anxiety Reduction and Foreign Language Learning Enhancement
Approval Status: Project is Ongoing and Open to Enrollment
Participating Sites: N/A
Original Protocol Approved: August 21, 2013
DHHS Review Category: Expedited #5, #7
Informed Consents: One (1) signed consent form for experimental group
Monitoring Interval: 12 months

APPROVAL EXPIRATION DATE: AUGUST 1, 2017

Investigator's Responsibilities:
1. The informed consent form bearing the IRB approval stamp must be used when recruiting participants into the study.
2. The investigator must notify IRB immediately of unexpected adverse reactions, or new information that may alter our perception of the benefit-risk ratio.
3. Study procedures and files are subject to audit any time.
4. Any modifications of the protocol or the informed consent as the study progresses must be reviewed and approved by this committee prior to being instituted.
5. Continuing Review Approval for the proposal should be requested at least one month prior to the expiration date above.
6. This approval applies to the protection of human subjects only. It does not apply to any other university approvals that may be necessary.

C. Randall Colvin, Ph.D., Chair
Northeastern University Institutional Review Board

Nan C. Regina, Director
Human Subject Research Protection

Northeastern University FWA #4630
Dear CHNS 1101 and 2101 Students,

We are inviting you to take part in a research study. We are asking you to be in this study because you are a student who is learning Chinese. You must be at least 18 years old to participate. The purpose of this research is to measure whether the practice of bilingual (Chinese and English) guided relaxation meditation reduces classroom anxiety levels and enhance foreign language ability.

If you decide to take part in this study, the research will lead you in a five-minute bilingual meditation practice at the beginning of each lecture this semester. In addition, as part of the study we will administer a modified version of Horwitz’s Foreign Language Classroom Anxiety Scale (FLCAS, 1986) at the beginning, mid-term and end of the course. At the end of the study, we will also ask you to complete a questionnaire related to your reactions to the bilingual meditation practice.

The decision to participate or not to participate will have no effect on your class standing. Any questionnaires or scales that you complete for the study will be used for research purpose only and will have no impact on your grades in the program.

If you have questions or would like more information about the study, please do not hesitate to contact me.

Chieh Li
Principal Investigator
Associate Professor
Dept. of Applied Psychology
c.li@neu.edu
617-373-4683

APPROVED
Chieh Li  
Department of Applied Psychology  
Qinghong Cai  
World Language Center  
Northeastern University

Title of Project: Bilingual Guided Meditation Practice Program: Academic Anxiety Reduction and Foreign Language Learning Enhancement

Dear participants,

We are excited to invite you to take part in our study on Bilingual Guided Meditation Practice Program: Academic Anxiety Reduction and Foreign Language Learning Enhancement. This form will tell you about the study. You may ask us any questions that you have. When you are ready to make a decision, you may tell us if you want to participate or not. If you decide to participate, we will ask you to sign this statement and will give you a copy to keep.

We are asking you to be in this study because you are a student who is learning Chinese. The purpose of this research is to measure whether the practice of bilingual (Chinese and English) guided relaxation meditation reduces anxiety levels and enhances foreign language ability.

If you decide to take part in this study, the researchers will lead you in a five-minute bilingual meditation practice at the beginning of each lecture this semester. In addition, as part of the study we will administer a modified version of Horwitz’s Foreign Language Classroom Anxiety Scale (FLCAS, 1986) at the beginning, mid-term and end of the course. At the end of the study, we will also ask you to complete a questionnaire related to your reactions to the bilingual meditation practice.

The possible risks or discomforts of the study are minimal. Sometimes when people answer questions about their lives, they become more aware of issues that are distressing to them. If you want to discuss these issues, the Northeastern University Health and Counseling Services (UHCS) are available. The UHCS services are free to Northeastern undergraduates and are available to non-undergraduate Northeastern students who have paid to enroll in this service. The UHCS main office is located on the first floor of the Forsyth Building and can be reached at 617-373-2772. Additionally, if you want to talk with a free counselor who is not affiliated with NEU, please call 800-448-3000 or 800-448-1833. Calling this number will put in touch with a counselor from the National Crisis Hotline for short-term crisis intervention and counseling and referrals to local community resources. Also see, http://www.allaboutcounseling.com/crisis_hotlines.htm to learn more.

There are no direct benefits to you for participating in the study. It is hoped that the meditation practice may reduce your classroom anxiety level and enhance your foreign language learning ability, but that is not guaranteed.

APPROVED

NU IRB
VALID THROUGH
The decision to participate or not to participate will have no effect on your class standing. Any questionnaires or scales that you complete for the study will be used for research purposes only and will have no impact on your grades.

Your part in this study will be confidential. Only the researchers on this study will see your questionnaire responses. No reports or publications will use information that can identify you in any way or any individual as being part of this study.

Your participation in this research is completely voluntary. You do not have to participate if you do not want to and you can refuse to answer any questions. Even if you begin the study, you may quit at any time. If you do not participate or if you decide to quit, you will not lose any rights, benefits, or services that you would otherwise have as a student.

You will not be paid for your participation in this study.

If you have any questions about this study, please feel free to contact me, Chieh Li via c.li@neu.edu, the Principal Investigator.

If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection, 490 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: n.regina@neu.edu. You may call anonymously if you wish.

You must be at least 18 years old to participate.

I agree to take part in this research.

Signature of person agreeing to take part  

Date

Printed name of person above

Signature of person who explained the study to the participant above and obtained consent

Printed name of person above  

Date

APPROVED

NU IRB# 13-0972
VALID 5/7/14
THROUGH 8/7/14
## APPENDIX G: Sixty Units of SPSS Data

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### APPENDIX H: Comments about BGM® from Participants

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<td>More calm</td>
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<td>Did you feel the BGM® practice affect your performance in your Chinese class?</td>
<td>I liked the routine</td>
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<td>More focus</td>
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<td>Time to relax</td>
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<td>If yes, in which why?</td>
<td>relaxed me-more confident</td>
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<td>It helps me to calm down and less sleepy during lesson.</td>
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<td>I think it helped me get more into the ambience of speaking Chinese.</td>
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<td>Made me less nervous about the lessons.</td>
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<td>It helps me to be less scared to speak Chinese.</td>
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<td>It was a nice way to relax and prepare and focus.</td>
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<td>Helped me focus on class material.</td>
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<td>Helps me focus on just Chinese and stop thinking about other things stressing me out.</td>
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<td>It calms me down and if I’m tired it helps me wake up.</td>
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<td>Helped me focus before class began.</td>
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<td>Taking the time to meditate before class allowed me to clear my mind, destress, and prepare to enter the right mindset to best learn and apply myself in class. I think it positively impacts performance as afterwards I feel myself more focused and alert.</td>
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<td>The music made myself relaxed so I could learn better.</td>
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<td><strong>Q6</strong></td>
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<td>Did you feel any change in your life outside of Chinese class as a result of the BGM® practice?</td>
<td>whenever studying was heard I remembered the lady’s voice.</td>
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<td>I started listening more for words used in the meditation.</td>
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<td>It gives me time to also think about other things, so after I can focus on Chinese.</td>
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<td>I’ve been trying to find time to relax more, so I can focus better.</td>
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<td>The mediation at the end of class was a nice way to end the class.</td>
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<td>Less insomnia-has taught me how to calm my mind.</td>
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<td>Sometimes whenever I’m nervous I take time to meditate.</td>
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<td>I said maybe, but I sometimes listen to relaxation songs.</td>
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<td>I feel more able to try new things after seeing that Chinese is not as scary as people make it seem.</td>
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<td>Getting to know this beautiful language makes me really happy, and speaking Chinese with my Chinese friends helps me bond with them.</td>
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<td><strong>Q9a</strong></td>
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<td>What do you think about the way the BGM® program was presented?</td>
<td>I am a fan.</td>
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<td>very easy-going</td>
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<td>It was explained well.</td>
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<td>Very interesting because no other class does it.</td>
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nice simple, fast
I think it was helpful, but picking up that was a subconscious process.
It was good, except I thought we should do it before dictations (not after).
It was useful at times.
I think it was nice to do English first so I could do my best to know what they were saying.
It was fine.
I thought it was unnecessary but have grown to like it.
It is effective as it is.
I like it.
It helps me to get well-prepared for the class.
Excellent, provided a relaxed environment to learn a challenging language.
It’s interesting.
I liked the enthusiasm behind it.
I think it is presented well because stress and anxiety are especially high when learning a new language.
It was good.
To strongly encourage students to get motivated.
Calming
Good to have at both ends of each class.
I liked it and thought it helped to turn off the lights during it.
I liked it because I was able to practice my Chinese as I followed along.
Relaxing
I always enjoy it and think it’s well done.
I enjoyed the bilingual aspect- understanding more words over the side by side was nice.
It was presented well as it is.

| Q9b | Which elements did you like most (Bilingual format, positive suggestion, music, or guided meditation)? | Meditation is the best.
The music was relaxing and nice.
I think it helped me more into the ambience of speaking Chinese.
I think it positively impacts performance as afterwards I feel myself more focused and alert.
As the class progressed, I learned many of the words and gradually I understood about ½ of the Chinese.
I remember the positive suggestions and could understand parts of the Chinese at the end.
I felt like there wasn’t much positive suggestion input, but the other aspects were quite calming and helpful.
The music was very calming.
As the class progressed, you understand more of the Chinese.
I didn’t dislike any of them, I just found the music very calming so everything else was ranked randomly.
Since this is a language class the bilingual format is probably the most helpful.
At least there were some language part I could identify.
Mostly I focused on trying to understand the mandarin. |
| **Bilingual format helped to group more vocab and interaction.**  
| All these elements are great and better helped me learn Chinese.  
| The bilingual format helps to stay aware of what is being said  
| The positive suggestion is reassuring.  
| I like the sound of Chinese during the meditation because it helps me become less anxious about speaking Chinese.  
| The music is calming and helps me be more at ease.  
| Music is most relaxing.  
| It was very relaxing and calming to listen to.  
| Music calms me.  
| Guided meditation helps format the meditation. Very relaxing. Music helps steady breathing and clear mind. Bilingual format is nice to hear instructions in both languages.  
| The music helps me to relax.  
| By going back and forth between two languages, students are able to learn (in my case) more about different cultures. If it weren’t for the bilingual meditation, I wouldn’t have known that ‘qing song’ is ‘relaxed’ I think it is super effective, personally. |

| **Q10**  
| Which BGM® version do you feel most effective and helpful? (Beginning of class, End of class, or both)?  
| Why?  
| The beginning of class is when I’m most out of sync with the classroom  
| Helps to retain learning.  
| Because we spent 2 minutes not worrying about the dictation and just do nothing.  
| Ends a hard class on a positive note.  
| They both relaxed the mind.  
| Nice way to end the class.  
| Nice way to close a class.  
| I usually show up to class stressed from either running late or rushing form my last class so having a moment to clear my head is nice.  
| They were both good.  
| It’s a constant to the day.  
| It reduces the amount of sleepiness during class.  
| Almost like warm-up and warm-down for mind.  
| Provides stress-free environment which is important because Chinese can be a very difficult language to learn and this makes it easier.  
| Because it is a way of forgetting about other classes and concentrating on Chinese.  
| Settled my mind.  
| We need to begin relaxed in order to fully absorb the material and end relaxed as well in order to feel comfortable about the lesson learned.  
| I liked it a lot.  
| Clears your mind.  
| It seemed more helpful to focus on relax before the class than after it.  
| Wakes me up.  
| To calm down after entering a room and prepare for class. The opening meditation was most effective.  
| I feel it helps me contain my Chinese learning so I do not forget it.
<table>
<thead>
<tr>
<th>Q11</th>
<th>Any other comments?</th>
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<tbody>
<tr>
<td></td>
<td>I like to have relaxation for both. I liked this practice, it helps focus the class, settle down the students. I hope the meditation continues and maybe a little advanced meditation would be nice. Every time I heard it I would subconsciously know the meaning, drilling it further in my head. It successfully goes into my mind.</td>
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