THE INFLUENCES OF MINDFULNESS ON FOREIGN LANGUAGE FLUENCY MEDIATED BY IRRATIONAL THOUGHTS, FOREIGN LANGUAGE ANXIETY AND SELF-EFFICACY ON THAI ENGLISH LEARNERS

Netpreeya Choomchaiyo

ID. No. 5719292

A Dissertation Submitted in Partial Fulfillment

Of the Requirements for the Degree

DOCTOR OF PHILOSOPHY IN COUNSELING PSYCHOLOGY

Graduate School of Human Sciences

ASSUMPTION UNIVERSITY OF THAIALND

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Accepted by the Graduate School of Human Sciences, Assumption University in Partial Fulfillment of the Requirements for the Doctorate Degree of Philosophy in Counseling Psychology

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ABSTACT

I.D. No.: 5719292

Key Words: Mindfulness, Irrational Thoughts, Fear of Non-achievement, Concern over Mistake, Perfectionistic Cognition, Inferiority Feeling, Foreign Language Anxiety, Self-efficacy, Foreign Language Fluency

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Dissertation Advisor: DR. PARVATHY VARMA

This study investigated the impact of selected psychosocial factors on the foreign language fluency among Thai people. Two investigations were conducted. The first study explored the influences between mindfulness, irrational thoughts, foreign language anxiety, self-efficacy, and foreign language fluency. The CFA and SEM analysis of the sample of 1,358 Thai students and office workers revealed that mindfulness both directly and indirectly influenced irrational thoughts (comprised of fear of non-achievement, concern over mistake, perfectionistic cognition, and inferiority feeling), foreign language anxiety, self-efficacy and foreign language fluency. Mindfulness was found to have a negative relationship with foreign language anxiety; and foreign language anxiety also had an adverse effect on self-efficacy and foreign language fluency. The second study focused on the effectiveness of a two-weeks intervention program that incorporated components of mindfulness and other influential factors on foreign language fluency of 98 Thai nationals. Though the mean scores show some changes from pre-test to post-test 1 and from post-test 1 to post-test 2 in irrational thoughts and foreign language anxiety in the negative direction and in self-efficacy and foreign

language fluency in the positive direction, in compliance to the SEM analysis, the ANOVA results revealed no significant changes in all variables between the experimental group and the control group over the time period. Therefore, it can be concluded that no changes are due to the interaction effect of the mindfulness intervention.

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Netpreeya Choomchaiyo

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LIST OF ABBREVIATIONS

Abbreviations	Words
MIND	Mindfulness
IRT	Irrational thoughts
FNA	Fear of non-achievement
CM	Concern over mistakes
PC	Perfectionistic cognition
INF	Inferiority feeling
FLA	Foreign language anxiety
SE	Self-efficacy
FLU	Foreign language fluency

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CHAPTER I.

INTRODUCTION

Background of the Study

As the world changes, English is now playing a vital role in human connectivity. The use of English as a world communicative language has been increased dramatically and has drawn attentions to all walks of life. People of different cultures are now facing a big challenge of learning and acquiring English communicative skills. A homogeneous culture like Thailand also struggles to increase Thai people's English proficiency. Lots of budget have been spent, and sometime wasted, in language trainings every year. Still, based on a study on English proficiency by Education First (EF), a Switzerland global education company in 2019 compared to 2018, Thailand's rank has dropped 10 points from 64th out of 88th globally and 16th out of 21st in Asia in 2018 to 74th out of 100th globally and 17th out of 25th in Asia in 2019 with a very low score of English proficiency 47.61 (Sullivan, 2019).

From this researcher's 30 years observation as an English teacher in schools and in company trainings in Thailand, most of the Thais, who normally passed a national English proficiency exam, still lack of adequate skills to communicate in English in classrooms, in real life business and social settings. Therefore, they try to increase their English communicative skills by attending private or in-house English training courses when they enter a workplace. However, some of them cannot overcome fears of speaking English and continue to attend courses throughout their life.

In business setting, managers often find their employees' inadequate skills to communicate in English both in and outside their workplaces. On the other hand, employees also feel that their career security is now threatened by their insufficiency in English language

skill. This has also led to the problem of foreign language anxiety in the workplace. According to Hunter (2007), the lack of clear communication often leads to frustration and stress on individuals, and high turnover and profit loss for the company. English language proficiency, including accent, has become a major obstacle to appropriate work placement. Workers also believe that an inability to communicate in foreign language creates 'ostracism' by language in the workplace (Hitlan, et. al., 2006).

Nowadays, the adoption of English as a corporate language in Thailand has provoked various reactions ranging from enthusiastic embrace to strong rejection based on anxiety and cultural protectionism. To this researcher's experiences in conducting in-house trainings, Thai workers with poor ability to communicate in English feel that they are ostracized by their language proficiency and resulted in 'foreign language divide' between high and low English proficiency groups. Most workers, who attend language training courses, admit that they do it for the security of their jobs and the promotion as required by a company, or even to lower prejudice in their workplace, but beyond all that, they do it to instill hope that they will be able to communicate in English fluently with confidence one day.

Most Thai people feel anxious when they communicate in English regardless of their education, experiences and exposure to the language. It is not surprising to see some well-educated Thais who have spent years in foreign countries, yet, feel anxious to communicate in that foreign language. At the same time, some Thais who have no experiences studying or working overseas, yet, can communicate well in a foreign language notably. What makes the difference is a person's irrational thoughts (or occasionally referred to as 'mental blocks' in this study) and misinterpretation of the situation around him and of his self-image (Chinpakdee, 2015; Aoibumrung, 2016).

The above-mentioned problems have inspired this researcher to put continuing efforts to help Thais to communicate in English, or any other foreign languages, with confidence by overcome their foreign language anxiety.

Dr. Phra Maha Vudhijaya Vajiramedhi (Vajiramedhi, 2012), a Buddhist monk who is well-known among Thais as a notable clerical scholar, thinker, writer, and vipassana meditation teacher, explained Thai people's sufferings that it's caused by their own distorted view and misinterpretation of situations. He had introduced this researcher to a basic meditation and how mindfulness can help reduce worry and fear in everyday life. This researcher tried the technique to see it for herself. After a few months of doing a daily 15-minute meditation in the morning, this researcher found that she was better aware of herself, her actions and her thoughts.

In 2013, Srithanya psychiatric hospital in Thailand has launched a successful 8-week-program for treating patients who suffer from anxiety disorders, depression and addiction, using a mindfulness-based stress reduction (MBSR), based on the work of Jon Kabat-zinn, who founded the Stress Reduction Clinic at the University of Massachusetts Medical School in 1979. Therapists in Srithanya MBSR program are all vipassana meditation practitioners. The program at Srithanya Hospital had been proven successful and now had been used to treat patients with anxiety and depression in 13 out of 18 psychiatric hospitals throughout the country.

With an interest to explore more on the mindfulness effect on anxiety, this researcher attended a 10-day-vipassana meditation course by S.N. Goenka and had seen it for herself how mindfulness or the awareness of the present help reduce stress and increase thinking skills. Therefore, she came up with an easy concentration technique, a self-awareness of physical and mental (cognition and feelings) sensations, that can be used in every life to help her students

focus better on their present thought, worry less and speak English more fluently with more confidence.

Therefore, this study aims to explore mindfulness and other factors associating with Thai people's foreign language anxiety and ways to eliminate or reduce it, and how it improves people's foreign language fluency and self-efficacy.

Statement of the Problem

When using English as a communicative language with others, most Thais usually express anxiety, apprehension and nervousness with or without realizing it, leading to some disfluency in their speeches like pauses, utterances, fillers, mispronunciations and even avoidances to speak out.

Many studies have found a link between foreign language anxiety and foreign language learning (Chinpakdee, 2015; Aoibumrung, 2016), and the effect of mindfulness in reducing foreign language anxiety and increasing foreign language proficiency (Ramel, et.al., 2004; Toneatto, et.al., 2007; Sears & Kraus, 2009; Yong, et.al., 2009; Semple, et.al., 2010). However, most studies focus on the classroom anxiety and very few focus on a foreign language use in a daily life. Most measurement scales used are also focus on the student in classes. Moreover, foreign language anxiety has been found to derive from a person's self-related cognitions, treats to his social status and fears of losing his self-identity (Hashemi, 2011). Therefore, this researcher wanted to find out whether mindful directly influences a person's foreign language anxiety or indirectly influences through a person's negative cognition or irrational thoughts.

Although many studies have found that a mindfulness practice significantly reduced anxiety and increased foreign proficiency in general, there is lack of suggestion on how to use mindfulness in practical ways to overcome the anxiety and increase self-efficacy and foreign language fluency.

Therefore, this study aimed to find out to what extend mindfulness effects factors influencing irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency, and to find out whether a mindfulness intervention can help increase a person's awareness of the present, reduce a person's foreign language anxiety and improve self-efficacy and foreign language fluency. This study was anticipated to provide empirical psychological research that would contribute to the improvement of Thai people's foreign language communicative skills by reducing their foreign language anxiety and improve their language efficacy leading to sustainable communicative skills.

Purpose of the Study

As mentioned earlier, while most Thais have spent a large amount of time and money on both formal and informal study of English hoping they can communicate in English with confidence, most practices have failed to reduce the students' foreign language anxiety and increase efficacy and fluency. Moreover, numerous researches studied the relationship between foreign language anxiety, language efficacy and fluency. In addition, other research found significant impact of mindfulness in reducing anxiety and depression, but there's scarcity of research on the relationship between mindfulness and foreign language anxiety.

Therefore, this study attempted to explore the relationship of mindfulness and its impacts on foreign language anxiety and examine if, indeed, mindfulness or the awareness of the

present can reduce Thai people's foreign language anxiety and increase self-efficacy and foreign language fluency. More specifically, the effects of mindfulness on Thais' English mental blocks or distorted thoughts which lead to a foreign language anxiety will also be examined through the experimental approach. This research also aims to identified how Thai people who use English to communicate with other can overcome the language anxiety using mindfulness meditation techniques in a practical way.

To fulfill the objectives, the study was divided into three separate but interrelated studies (hereinafter referred to as Study I, Study II, and Study III), each with its own purpose and methodology.

Study I aimed to test the psychometric property of the standardized instruments used for this study in a Thai context based on several instruments in previous research. The scale was tested on their psychometric power, validity, and reliability. This inventory would hopefully become a promising new self-report measurement to help teachers, learners and practitioners identify the influence of mindfulness on irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency.

Study II aimed to test the Thai-based component model derived from Study I and evaluate the causal relationships among measured variables - mindfulness, irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency. The best fit path model was also developed to identify a direct and indirect effect of mindfulness on other factor components.

Study III aimed to examine the effectiveness of a researcher-developed 15 days mindfulness intervention in influencing the factors of mindfulness, irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency, via a between and within two

groups (experimental vs. control group) repeated measures design. The intervention aimed to increase mindfulness which would hopefully reduce irrational thoughts and foreign language anxiety and increase self-efficacy and foreign language fluence among the participants.

Significance of the Study

It was hoped that this study would serve as a valuable knowledge resource on how to reduce foreign language anxiety and increase self-efficacy and foreign language fluency among Thai people. It aimed to provide an insight into cognitive effects on foreign language anxiety and how mindful awareness helped reduce the anxiety and increase fluency. The results of this investigation had the potential to enhance Thai people's ability to cope with their foreign language anxiety and helped them communicate in foreign language more confidently and effectively. The intervention from this study could be applied as one of the methods to reduce anxiety in different situations such as in public speaking, examination, and competition. Knowledge and skills derived from this study could also help Thai people to better understand their own distorted thoughts which led to anxiety and ways to cope with them using mindful awareness.

At present, there are numbers of studies on factors influencing foreign language anxiety as well as research on significant impacts of mindfulness in reducing anxiety and depression. However, there is no clear method to help people overcome foreign language anxiety. Therefore, this study would provide an empirical validation on how mindfulness help reduce foreign language anxiety in a practical way.

Another benefit of this investigation is the testing of the standardized empirical measurement scales on mindfulness and cognitive factors influencing foreign language anxiety

of which counselor, teacher, and students can use it to identify mindfulness and cognitive skills of a person and find practical ways to master them in cope of the anxiety.

It is anticipated that this study should contribute to the future research on mindfulness effects on stress, anxiety and other personality disorders.

Definitions of Terms

Definition of terms used in this study are from the literature reviews in chapter 2.

Mindfulness

Mindfulness is the quality or state of being conscious or aware of one's feelings, thoughts, and bodily sensations on purpose, in the present moment, non-judgmentally (Western context), and free from the *I, me, mine* of the personality belief or ego (Buddhist context).

Mindfulness is a human faculty that enables one to keep remembering and examining one's task and be attentive to whatever one is doing at present and manage the mind to be in the equanimity or the perfect balance of the mind (Buddhist Context).

In this study, mindfulness is defined as the quality or state of being conscious or aware of something like our body, mind, bodily sensations, feelings, emotions, and thoughts by bringing one's complete attention to the experiences or mental events occurring in the present moment non-judgingly and non-reactively (Baer, et.al., 2006).

Irrational Thoughts

Irrational thoughts or cognitive distortions are tendencies or patterns of thinking or believing that are false or inaccurate and have a potential to cause psychological damage. They

are biased perspectives a person takes on himself and the world around him and often lead to anxiety.

In this study, there are four irrational thoughts, derived from literature reviews which influence foreign language anxiety for Thai people; fear of non-achievement, concern over mistakes, perfectionistic cognition, and inferiority feeling.

Fear of non-achievement

Fear of non-achievement is an emotional, cognitive and behavioral reaction to the negative consequences a person anticipates for failing to achieve a goal, as well as a tendency to seek validation from others and to be sensitive to criticism (Hill, 2004).

Concern over mistake

Concern over mistakes is an emotional, cognitive and behavioral reaction related to a person's preoccupation with making mistakes and the consequence of it. It is a tendency to experience distress or anxiety over making a mistake and react negatively to mistakes and to equate mistakes with failure (Frost, et.al., 1990; Hill, 2004).

Perfectionistic cognition

Perfectionistic cognition is a person's preoccupation with self-evaluation and doubts, criticizes and unappreciates of his own performance, as well as perceives others as having high expectations (Frost, et.al., 1990).

Inferiority feeling

Inferiority feeling is a feeling of incompetence and absolute dependence due to a person's constant comparison to others and negative interpretations. In this study, inferiority feeling is defined as a reflection of individuals' feelings of frustration from being socially rejected as a result of low English proficiency (Wei, et.al., 2012).

Foreign language anxiety

Foreign language anxiety (or xenoglossophobia) is the feeling of unease, worry, nervousness and apprehension experienced when learning or using a second or foreign language. Foreign language anxiety (FLA), defined in this study, is a distinct complex of self-perceptions, beliefs, feelings and behaviors related to foreign language learning and communicating which contributes to an effective filter hindering a person's ability to absorb or acquire the target language (Krashen as cited in Horwitz, et.al., 1986).

Self-efficacy

Self-efficacy is the optimistic self-belief in competence or chances of successfully managing, accomplishing a task, and producing a favorable outcome (Schwarzer and Jerusalem, 2013).

Foreign language fluency

Foreign language fluency is the ability to express thoughts in English at length without hesitation with few pauses, less fillings, less repetitions, less restarts and less mistakes (Babaii, et.al., 2015).

CHAPTER II

LITERATURE REVIEW

Overview of the Chapter

In this chapter, the review of literatures on key variables and standardized scales related to the key variables will be conducted in order to understand the definitions of variables and the relationships between variables; and, to come up with the theoretical framework for this study. There are 3 sub-studies in this chapter.

In study I, the definitions of all 8 key variables, including; mindfulness (MIND), irrational thoughts (IRT) – fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognition (PC), and inferiority feeling (INF) -, foreign language anxiety (FLA), self-efficacy (SE), and, foreign language fluency (FLU), are be discussed. The review of instrumentations for key variables in recent research are also conducted in order to find the best standardized scale to measure variables in this study.

In study II, the relationship between key variables is reviewed in order to develop the conceptual framework for this study.

In study III, the current investigation of this study is conducted in order to clarify how mindfulness influences foreign language anxiety through mediation. Research questions and hypotheses are proposed.

Study I

There are numbers of research on foreign language anxiety (FLA) conducted in many countries around the globe including Thailand (Aida, 1994; Onwuegbuzie, et.al., 1998, 1999; Anyadubalu, 2010; Tanielian, 2014; Chinpakdee, 2015). Researchers have explored factors influencing foreign language anxiety as well as its impact on self-efficacy (SE) and foreign language fluency (FLU). This researcher, observing foreign language anxiety of Thai people for many years of her own experience, has also conduct focus groups to identify factors influencing foreign language anxiety among Thai adult English learners. However, the definitions of those influencing factors are sometimes unclear and intertwined with each other. For examples, the definition of perfectionistic cognition (PC), one of the four irrational thoughts (IRT) which influences foreign language anxiety (FLA) in this study, can be intertwining with some other factors, like concern over mistakes (CM).

Therefore, the study I in this chapter aims to explain the definitions of the key variables in this research framework including; mindfulness (MIND), fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF), foreign language anxiety (FLA), self-efficacy (SE), and foreign language fluency (FLU), respectively. The literature reviews of instrumentation for key variables, as well as mindfulness-based therapies to be applied to the intervention in the experimental research in study III, will also be discussed.

The study II in this chapter will explore relationships among the key variables in this research framework. After that, the conceptual framework for this study will be proposed.

The study III in this chapter aims to review the current investigation of different categories of the key variables in order to come up with research questions and research hypotheses.

Focus Groups for Key Variables Identifacation

Before identifying the key variables for the study, this researcher has conducted focus groups in her English classes at Kru Kate English School, SCG Chemical Co., Ltd. (Bangkok and Rayong offices) and Bangchak Corporation to identify factors influencing foreign language anxiety among Thai adult English learners. There were 10-15 adult English learners in each group. The participants reported that, they could not express their ideas into English sentences because they were afraid to make mistakes and make a fool in front of others. Some thought that other people spoke better English than they did which made them felt reluctant to say something in English. Some reported that they deliberately checking whether their English were grammatically correct. Even some who spent months to years studying or working overseas reported that their English were not as fluent as they wanted them to be. Most of them believed that their lack of knowledge on vocabulary and grammar, as well as opportunities to practice or use English in real life situations were the cause of their poor English proficiency. Many of them believed that their past failures in learning and communicating English with others played important roles in generating foreign language anxiety to them.

When asked to explain their anxieties, the participants reported some signs including hands trembling or cold, voice harsh or stuttering, heat and perspiration, pressures on head or chest, numbness and the state of mental block or inability to think through or recall what they wanted to say. Most of them reported that once aware of the signs of anxiety, their anxiety levels

seemed to increase resulting in poorer English performances. On the other hand, some reported that when they realized that they were anxious to speak English, they would try to face the challenge by concentrating harder and moving on.

The results of focus groups revealed some links between irrational thoughts and foreign language anxiety, self-efficacy, and foreign language fluency among Thai adult English learners. It also revealed that when they were mindful, they could recognize their own signs of anxiety on their body or in their thought. Therefore, this study aimed to identify the relationship among mindfulness, irrational thoughts, foreign language anxiety, self-efficacy, and foreign language fluency. The clear definitions of these factors would be further studied in the following reviews of literatures.

Definitions and Theoretical Framework of the Key Variables

Mindfulness

It is difficult to accurately describe 'mindfulness' though we have been experiencing the mindful and not very mindful moments much of the time in our daily lives. We feel our heavy breaths when we are tired after a heavy exercise but, somehow, we do not even realize that we breathe heavily or hold our breaths when we are stressed or worried about something. Most mindfulness practitioners and therapists would start explaining it by having us notice our waking moments and be aware of senses of our own body, for examples, as we sit on a chair, we feel our buttocks touching and our body weight pressing on a chair, our head, shoulders, arms, hands and torso rising upright. We feel itch, pain, tingling, numb on our skin and muscles. And, if we focus our attention inside our body, we can feel our heart pounding or stomach rumbling. Moreover, as

being aware of ourselves, we are also aware of our environment, the space, objects, people, sounds, smells and temperatures around us. And once we notice our feelings, we are also aware of our thoughts and emotions, as well as our bodily sensations, externally and internally.

In 1979, the founder of the Center for Mindfulness in Medicine, Health Care, and Society at the University of Massachusetts Medical School, Jon Kabat-Zinn, defines mindfulness as paying attention in a particular way - on purpose, in the present moment, and non-judgmentally. Mindfulness is about being fully awake, perceiving the exquisite vividness of each moment, and gaining immediate access to powerful inner resources for insight, transformation and healing (Segal, Williams & Teasdale, 2002).

In scientific and psychological research, various definitions of mindfulness have been proposed and could be viewed in three aspects, a state of mind; a present awareness; and a practice and skill.

The definition of mindfulness in terms of a quality or a state of mind, focuses on 'attention', a mental state at a particular time or a clear and single-minded awareness of what actually happens to us and in us at the successive moments of perception (Nyanaponika, 1972, p. 5). When a person is mindful, s/he pays attention in a particular way on purpose to things as they are, in order to know what is on his/her mind, in the present moment, and non-judgmentally (Kabat-Zinn, 1994, p.4; Segal, et.al, 2013, p.132) and maintains attention on immediate experience, while taking an orientation of openness, acceptance, and curiosity (Bishop, et.al., 2004). In other words, mindfulness is a quality or a state of mind when a person focuses or pays attention on a single perception at a single moment of time non-judgmentally. For example, a meditating practitioner closes his eyes and focuses on his breathing in and out, he puts all his attention only on his breath; a swimmer pays attention on body moments in water; and; a driver

fixed his attention on the road. While they are mindful on one particular thing, their minds are free from all thoughts.

However, in contrast to the concept of clear single-minded state of mind mentioned above, Langer (1989) states that mindfulness is a cognitive process involving an awareness of multiple perspectives and an openness to novel information. He has seen mindfulness as a predominantly multi-dimensional metacognitive construct, in which an individual maintains an intentional alertness to distinctions. The concept of multiple perspectives is also supported by Langer & Moldoveanu (2002) that a mindful person, attends to all aspects of a situation, is open to perceiving the situation from many different perspectives and is flexible in the mental categories developed and used. Therefore, mindfulness can be understood as a state of mind in which a person be aware of internal and external environment that encounters his sensory receptors, in other words, a person's awareness of his mental and physical sensations.

The second conceptualization of mindfulness defines it in term of a present awareness, as the keeping one's consciousness alive to the present moment (Hanh, 1976, p. 11) or keeping one's complete attention to the experience on a moment to moment basis (Marlatt & Kristeller, 1999, p. 68). Mindfulness can be explained as the state that a person recognized when s/he is on an 'automatic pilot' (Watt, 2012), or 'habitual responding' (Wenk-Sormaz, 2005) or a state of unawareness of what a person is doing or thinking, and step out into the freshness of the present moment. Therefore, mindfulness is a state of staying awake and aware of the present moment as simply defined by a Buddhist monk, Vajiramedhi (2012).

The third school of thought has defined mindfulness in terms of a practice and skill. It is widely described as a practice espoused by Siddharta Gautama, more commonly known as the Buddha and his followers as a tool in the cessation of suffering (Borynski, 2006). It is a

metacognitive skill viewed as self-regulation of attention, which involves sustained attention, attention switching and inhibition of elaborative processing (Baer, 2003). Mindfulness involves the skillful use of attention to both inner and outer worlds by being fully aware of something, in the moment with it, and not judging or resisting it (Handson, 2009).

Mindfulness components have been introduced by researchers (Kabat-Zinn, 1994; Bishop, et.al., 2006; Baer et.al, 2004, 2006, 2008) as: (1) the ability to regulate attention – skill of sustained mindful attention, switching, inhibition of secondary elaborative procession, and diminish self-talk; (2) an orientation to present or immediate experience – curiosity, experiential, openness and acceptance; (3) awareness of experience – decentered awareness; (4) attitude of acceptance or non-judgment toward experience – accepting difficult thoughts/ images/ self; and (5) the ability to remain with difficult cognitions and let them pass without reacting.

Researchers (Baer, et.al., 2006) have explored available mindfulness questionnaires, such as; the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), the Freiburg Mindfulness Inventory (FMI; Buchheld, et.al., 2001), the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, et.al., 2004), The Cognitive and Affective Mindfulness Scale (CAMS; Feldman, et.al., 2004; Hayes & Feldman, 2004), and the Mindfulness Questionnaire (MQ; Chadwick, et.al., 2005), and came up with the five facets of mindfulness of which they termed; (1) observation of the present moment experience, (2) describing, (3) acting with awareness, (4) nonjudging of inner experience, and (5) nonreactivity.

Later, the Five Facet Mindfulness Questionnaire (FFMQ), was developed to define mindfulness as a process of distancing by which one learns to experience thoughts, feelings, and emotions as mental events that pass by. This process results in a reduction of identification with emotions, thoughts, and body sensations (Baer, et.al., 2006 and Bohlmeijer, et.al., 2011).

However, mindfulness definition in the western context is more attentive to the awareness of external reactions or physical sensations, as it primarily focuses on the appraisal of external situations (Langer,1989; Langer & Moldoveanu, 200), which is substantively different from Buddhist mindfulness meditation techniques that focuses on the appraisal of both external and internal situations (Borynski, 2006; Watt, 2012), as well as the awareness of ego personality as Vajiramedhi (2012) describes that during mindful awareness, our mind is occasionally free from the *I, me, mine* of the personality belief or ego.

All the Buddha's teaching focus on the importance of the mind. The objective the Buddhist mindfulness meditation is to purify the mind to bring wholesomeness (Sanskrit: *puṇya*, Pali: *puñña*) and skillfulness (*Kusala*) of the mind to perfection (Siricharo, 2009). A person should develop self-awareness, supported by mindfulness and discernment. Mindfulness or *sati* (or attentiveness, detached watching, awareness) is a human faculty that enables one to keep remembering one's task and be attentive to whatever one is doing, and, discernment or *puñña* is a human faculty that enables one to search, probe, compare, and investigate (Brahmagunabhorn, 2005; Siricharo, 2009). Mindfulness and discernment act as an internal mirror to examine one-self and keep track of the mind. If the mind wanders about instead of staying pure and calm at the moment, then mindfulness helps a person remain aware of the present and discernment helps a person to manage the mind to be in the equanimity or the neutral state or the perfect balance of the mind. At this particular moment of equanimity, a person obtains emotional stability and is free from impurities (or defilements): anger and hatred; anxiety, worry and delusion; greed, jealousy and envy; and ego (Hart, 1987; Siricharo, 2009; Vajiramedhi, 2012).

In a nutshell, the definition of mindfulness in this study refers to the quality or state of being conscious or aware of something like our body, mind, bodily sensations, feelings, emotions, and thoughts by bringing one's complete attention to the experiences or mental events occurring in the present moment.

Mindfulness and Stress Reduction

Researchers have found significant relationship between mindfulness and lower negative emotions, stress, and mental distress and greater positive emotions and life satisfaction (Bao, et.al., 2015; Schutte & John, 2011; Wang, Yu & Feng Kong, 2014). Mindfulness also enhances emotion regulation, attentional control, self-awareness, and self-regulation, which allows for behavioral flexibility and goal-directed behavior in changing environments (Holzel, et.al, 2011). Mindfulness helps improve well-being through mechanisms such as better self-regulation, experiential acceptance, compassion and self-acceptance, and interpersonal behavior (Baer, et.al., 2006; Bohlmeijer, et.al., 2011).

Recent experimental research conducted in Thailand revealed that factors influencing depressive mood disorder in 22 Thai women were their cognitive thinking, awareness and interpretation of situations, personality, problem coping and managing skills. The awareness of causes of problem, their thoughts and thinking pattern, and acceptance released them from depression (Paokantrakorn, 2005). Mindfulness was reported to have helped 13 first diagnosis of major depressive adult patients to return to their normal life by recognizing the occurrence of disorder, accepting and understanding it, changing mindset and behavior, and returning to roles and functions in normal life (Jitsangob, P. (2017).

Mindfulness can reduce a person's stress and anxiety by helping him to learn to be happy and blissful on everyday basis by being mindful and aware of the present moment. During mindful awareness, a person's mind is occasionally free from the "*I, me, mine"* of the personality belief and have a fairly manageable moment. At such times, a person is freed of such thought that "I am, I have, I exist, I am somebody or I am being seen in the eyes of others". In the mindful moment, a person's self-view based on his/her image does not exist. There is only a refreshing, blissful state of mind. During mindful awareness, the mind is free from dukkha (suffering, dissatisfactions, stress, pain and misery). But when a person stops being mindful, his/her mind returns to its unfocused state or dukkha (Vajiramedhi, 2012).

Mindfulness practice has been incorporated in several treatment programs. Well-known programs are mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1990), mindfulness-based cognitive therapy (MBCT; Teasdale et al., 2000), and dialectical behavior therapy (DBT; Linehan, 1993). There is empirical support for the efficacy of mindfulness-based therapies in people with subclinical depression (Bohlmeijer, et. al., 2011), recurrent depression (Ma & Teasdale, 2004; Teasdale et al., 2000) and with general anxiety disorders (Roemer et al., 2008).

Since 2013, Srithanya Hospital, a mental health hospital under the Ministry of Public Health, Thailand, continued the work of Paokantrakorn (2005) by conducting mindfulness-based therapy and counselling program, which incorporated Buddhist psychotherapy and mindfulness-based therapy, to help patients with anxiety. The program, proven successful among 200 depressive patients, was comprised of eight workshops and three months of daily meditation including 10 minutes sitting meditation, 10 minutes awareness of body sensations, 10 minutes awareness of their own thoughts, and awareness of the present moment in everyday life. These

daily practices help build new learning within self. The patients recognized their anxiety and developed the internal peace within themselves by letting go of the anxiety.

It can be concluded that mindfulness helps reduce stress and anxiety by making people aware of their own negative thoughts that lead to anxiety and focus on the present experience and accept it non-judgmentally. The mindful acceptance calms down the mind and stops further interpretation of the situation which may arouse fear and anxiety.

Mindfulness in Practice and Mindfulness Therapies

Transcendental Meditation

The earlier form of an eastern meditative practice and often utilized in psychotherapy is known as a transcendental meditation (TM). The technique, developed by Maharishi Mahesh Yogi (Mason, 1994), deliberately focused upon a single stimulus, such as a mantra (i.e., a specific word) or breathing to help concentrate, and is practiced for 20 minutes twice per day while sitting with closed eyes (Lansky & St. Louis, 2006). When meditating, the ordinary thinking process is transcended and replaced by a state of pure consciousness. In this state, the meditator achieves perfect stillness, rest, stability, order, and a complete absence of mental boundaries.

In a meta-analysis of 19 studies examining the use of TM in substance abusing individuals, Alexandra, et.al. (1994) found that all the studies revealed positive effects on decreasing alcohol and substance usage.

TM had also been found by MacLean et al. (1997) quasi-experimental study that a training and twice-daily practice of TM significantly lower stress-related hormones such as cortisol and growth hormone.

Researchers found that TM technique is twice as effective at reducing anxiety than any other meditation techniques (Dillbeck, 1977; Eppley, et.al., 1989; Orme-Johnson & Barnes, 2013). A scientific statement from the American Heart Association concluded that TM technique is the only meditation practice that has been shown to lower blood pressure (Brook, et.al, 2013).

TM is now widely used in schools, universities, corporations, and prisons in many countries as a technique to reduce stress and anxiety, improve brain functioning and boost learning ability and creativity.

Mindfulness Meditation (*Vipassana* or Insight Meditation)

In contrast to TM, mindfulness meditation, also called *Vipassana* or insight meditation, focuses on the present awareness as a person moves his/her attention to different part of the body and remains open to all of experience. Although meditators are usually taught to focus on their breathing early in their training, mindfulness meditation also teaches individuals to be aware of sounds, thoughts, feelings, and bodily sensations. Although thoughts, feelings, and bodily sensations are typically perceived as "distractions" from the attention to breathing, these experiences are equally important to noticing one's breathing (Goleman, 1981).

Vipassana, which means to see things as they really are, is one of India's most ancient techniques of meditation. *Vipassana* meditation technique was rediscovered by Gothama Buddha more than 2500 years ago and was taught by him as a universal remedy for universal ills. This non-sectarian technique aims for the total eradication of mental impurities and the resultant highest happiness of full liberation (Goenka, 2002). The technique has been practiced from then until now around the globe (Chandiramani, et.al., 1998; Fleischman, 1999).

The word *'Vipassana'* in the ancient Pali language in India means 'Insight'. The purposes of *vipassana* meditation is to develop from the insight or to improve concentration and self-awareness through the training of the mind and to seek self-transformation through self-observation of ongoing experience as impersonal phenomena without reacting to it (Hart, 1987; Ala'Aldin Al-Hussaini, 2001; Gunaratana, 2002; Lutz et.al., 2007).

Vipassana is a way of self-transformation through self-observation. It focuses on the deep interconnection between mind and body, which can be experienced directly by disciplined attention to the physical sensations that form the life of the body, and that continuously interconnect and condition the life of the mind. It is this observation-based, self-exploratory journey to the common root of mind and body that dissolves mental impurity, resulting in a balanced mind full of love and compassion (Goenka, 2002).

One of the prominent *vipassana* meditation courses is the one taught by S.N. Goenka, in the tradition of Sayagyi U Ba Khin, a ten-day intensive residential course conducted in 310 meditation centers in 94 countries around the globe. Meditators attending *vipassana* courses learn to examine the reality of their body and mind, to uncover and solve whatever problems lie hidden inside, to develop unused potential, and to channel it for their own good and the good of others (Hart, 1987).

Nowadays, *vipassana* meditation has been found by researchers and meditators as a practical way to help mitigate psychological and psychosomatic distress, and improve well-being (Ala'Aldin Al-Hussaini, 2001; Szekeres & Wertheim, 2015). The study of Cahn, et.al. (2013) using an electroencephalography (EEG) on long-term *vipassana* practitioners reveals that *vipassana* meditation evokes a brain state of enhanced perceptual clarity and decreased automated reactivity.

Furthermore, research on regular meditators and non-meditators who took the test indicated that regular practitioners had higher scores than non-meditators, proving the direct positive correlation between meditation and mindfulness (Bohlmeijer et al., 2011).

Mindfulness-Based Therapies

Recently Eastern meditative traditions or mindfulness meditations have played significant roles in Western psychology and psychotherapy. Many types of psychotherapy, such as Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT), are the two most prominent mindfulness-based therapies which focus on the awareness of the present moment of a single stimulus or moving attention throughout the body. However, in other psychotherapies, such as Dialectical Behavior Therapy (DBT) and Cognitive Transformation Therapy (CTT), the techniques for increasing mindfulness have changed substantially from forms of meditation to sets of cognitive skills. A glimpse of each mindfulness-based therapies is as follows:

Mindfulness-Based Stress Reduction (MBSR)

Mindfulness-Based Stress Reduction (MBSR) was developed by Jon Kabat-Zinn (1990) for clients with chronic pain who did not successfully respond to traditional medical treatments. The eight weekly sessions train clients to nonjudgmentally accept whatever bodily sensations, thoughts, and emotions arise at their present awareness though the practice of walking meditation, sitting meditation, yoga, and body scanning.

Patients commit to spend time in the formal practice of non-doing and meditation many times a day in order to develop capacity for concentration and awareness. It is also

important that the patients cultivate informal practice by coming to their breath at various times during the day. They can choose some routine activities that they do on a daily basis like brushing teeth, showering or eating and truly setting the intention to be present to those experiences as best they can (Segal, et.al., 2002).

Over nearly three decades that MBSR, highly respected within the medical community, has been implemented for treating clients with chronic pain disorder and hypertension, and has shown substantial positive effects, both short-term and long-term (Kabat-Zinn et al., 1992).

Mindfulness-Based Stress Reduction (MBSR) has also been utilized in the treatment of psychological disorders. Many studies report significant decreases in mood disturbance, overall symptoms of stress and reliance on addictive behaviors (Perkins, 1998; Speca, et.al., 2000; Williams, et.al., 2001).

Additionally, MBSR has been utilized for other psychological and medical disorders including generalized anxiety disorder (Kabat-Zinn et al., 1992; Roemer & Orsillo, 2002), panic disorder (Kabat-Zinn et al., 1992), fibromyalgia (Weissbecker, et.al., 2002), psoriasis (Kabat-Zinn et al., 1998), and multiple sclerosis (Mills & Allen, 2000).

Mindfulness-Based Cognitive Therapy (MBCT)

Mindfulness-Based Cognitive Therapy (MBCT) is like MBSR in terms of teaching non-judgmental acceptance of bodily sensations, thoughts, and emotions through sitting meditation, walking meditation, and body scanning. However, unlike MBSR that generally provides psychotherapy treatment in a group format, MBCT is provided in an individual treatment format. Teasdale, et.al. (2002) posited that MBCT changes the nature of the

relationship between the client and his/her thoughts and feelings through the client's increased meta-cognitive awareness.

Dialectical Behavior Therapy (DBT)

Dialectical behavior therapy (DBT) is a psychological method developed by Marsha M. Linehan, to treat persons with borderline personality disorder (Linehan, 1993). Influenced by a Buddhist meditative practice, DBT combines standard behavioral therapy and cognitive therapy for emotion regulation and reality-testing with concepts of dialectical thinking, mindful awareness, distress tolerance, and acceptance (Chapman, 2006).

Rather than reacting to events as either perfect or unbearable, patients are encouraged to recognize multiple viewpoints, within a framework that reality consists of opposing, and bring them into dialogue. Mindfulness is implemented as a method for becoming aware of what's happening in the present and separating it from fears about the future or rumination about events in the past. Mindful awareness help patients accept the experience of the present moment for what it is, without struggling to change it or willfully resisting it (Linehan, 1993; Turner, 2000; Koons, et.al., 2001; Robins & Chapman, 2004).

DBT has been supported by numbers of researches to have helped patients with parasuicidal women with bipolar disorder, borderline personality disorder, binge-eating, multi-problems, as well as, those with comorbid Axis I and II disorders (Chapman, 2006; Nararro-Havo, et.al., 2016).

Cognitive Transformation Therapy (CTT)

Cognitive Transformation Therapy or CTT is an innovative therapy developed by a Thai, Nepalese origin, Buddhist monk, Venerable Phra Shakyavongsvisuddhi (Anil Sakya, Ph.D.) to work with inmates in Thai prison during 2017-2018. Her Royal Highness Princess Bajrakitiyabba of Thailand, who is deeply concerned about the well-beings of the inmates in the overcrowded Thai prisons, has asked Ven. Phra Shakyavongsvisuddhi to provide solution in order to reduce stress and violence in the prisons and reduce repeated criminals. Therefore, the Venerable Monk has designed a new intensive therapy session for inmates, based on Cognitive Transformation Theory of Klein & Baxter (2006) and Buddhist practice of Vipassana meditation, of which he called Cognitive Transformation Therapy or CTT. The nine months one-day-per-week group counseling therapy, initially conducted in 2017, is attested remarkably successful by prison wardens, judges and the inmates themselves. The technique of Vipassana meditation has been phenomenally successful in reducing the rate recidivism within prison population where it has been regularly used nowadays. The first 100 inmates who participated in the CTT courses, later became trainers themselves to conduct CTT to over 2,000 inmates in the Thai prisons throughout the country (Shakyavongsvisuddhi, 2017).

CTT simply teaches a person to manage his/her thought process and emotion based on his/her own existed knowledge to utilize it in a real-life situation. This approach to learning is to define the gap between the knowledge a person has and the knowledge the person needs to perform the task. The students recognize the problem in terms of flaws in existing mental models, not gaps in knowledge. Then, new knowledge will be added to the storehouse via practice and feedback. A mental model is a cluster of causal beliefs about how things happen. It is used to organize knowledge structures and schemata. The objectives of CTT is not only

adding additional beliefs, but also the belief system as experience shows the inadequacy of current ways of thinking. Through their own scrutinization, the participants will come to recognize their own distorted thoughts and actions, and think hard on cause and effect of their distorted thoughts and actions without direct intention and exercise. Once they can convince themselves with their new understanding and cognition, this will trigger them to think about their behaviors and mental models. With correct cognition, the therapy leads their mental models to change, not temporarily, but at a deeper and sustained level. The participants can discover ways to extend or even reject their existing beliefs in favor of more sophisticated beliefs (Klein & Baxter, 2006; Shakyavongsvisuddhi, 2017).

Mindfulness based therapies are now widely accepted and used in many fields such as mental treatment, education, public performance, and personal development. Though the treatment process requires dedicating and continuing practices, and the results may vary, mindfulness based therapy has introduced a new way to cope with difficulty and ease the inner pain by making a person realize his own cognition and perception that leads to unwanted results or behaviors.

Irrational Thoughts

Irrational thoughts or cognitive distortions are tendencies or patterns of thinking or believing that are false or inaccurate and have a potential to cause psychological damage. They are biased perspectives a person takes on himself and the world around him and often lead to anxiety.

For decades, Aaron Beck, the American psychiatrist known as the father of cognitive therapy (CT) and Eric Burns, Beck's student successor, are psychotherapists who explored

depression, cognitive distortions and treatment for these conditions. They found that a person's mood and behavior is influenced by his/her cognition about the past, present and future, and his/her interpretations of the internal and external world (Beck, 1976; Beck, et.al., 1979). These cognitions do not necessarily correspond to reality but based on attitudes or assumptions developed from previous experiences, therefore, can be distorted. Cognitive distortions arise from patterns and predispositions, indicating that this faulty pattern of thinking may be trait-like rather than state-like. Cognitive therapy helps the patient to become aware of cognitive distortions, and reduce depression and anxiety (Back, 1976; Beck, et.al., 1979; Burns, et.al., 1987; Alford & Beck, 1997; Ilardi & Craighead, 1999).

The six types of cognitive distortion; absolutistic/dichotomous thinking, arbitrary inference minimization and magnification, overgeneralization, personalization, selective abstraction, was originally proposed by Beck (1976). Later, Eric Burns (1990, 1999) suggested 10 cognitive distortions, including, all-or-nothing thinking, discounting the positive, emotional reasoning, jumping to conclusions, labeling, magnification, mental filter, overgeneralization, blaming and personalization, and should-statements.

In interpersonal and subjective dimensions, some cognitive distortions have been added including comparison, externalization of self-worth, perfectionism (Freeman & DeWolf, 1990; Freeman & DeWolf, 1992; Freeman & Oster, 1999). Later, Gilson & Freeman (1999) suggested that, in distorted cognitive processing, a person often engage in fallacious thinking, such as fallacy of change, fallacy of worrying, fallacy of fairness, fallacy of ignoring, fallacy of being right, fallacy of attachment, fallacy of control, and heaven's reward fallacy. Wei, Wang and Ku (2012) have also found that a person's perception of language discrimination was

associated with depression, anxiety, self-esteem, life satisfaction, racial discrimination, and English proficiency.

From this researcher's years of experiences teaching English to Thai people who suffer from foreign language anxiety, it has been noticed that they often feel worried and stressed about many things while communicating in English as desired. For example, they worry that they will say the wrong thing like making syntax errors or mispronunciations and embarrass themselves in front of others. Some believe that because of their limited vocabulary or insufficient knowledge, they cannot communicate in English as desire.

Therefore, in this study, only four cognitive distortions, which are collectively termed 'irrational thoughts' related to foreign language anxiety among Thai people, will be explored. A few types of irrational thoughts, among Thai people who suffer from foreign language anxiety, derived from literature reviews (Horwitz & Young, 1991; Stober & Joormann, 2001; Chang, et.al., 2007; Toth, 2010; Yang, et.al., 2015; Tzoannopoulou , 2016; Mulyono, et.al., 2019), the researcher's observations and focus groups, which were explored in this study, are fear of non-achievement, concern over mistakes, perfectionistic cognition, and inferiority feeling, as the following.

Fear of Non-Achievement

Fear of failure or non-achievement is an emotional, cognitive and behavioral reaction to the negative consequences a person anticipates for failing to achieve a goal (Tsaoussides, 2015). This negative thinking leads to an intense worry and reluctance to take action when a person imagines the terrible things might happen if s/he fails to achieve a goal. A person who fears of non-achievement tends to focus his efforts more on preventing losses than achieving

gains, as well as focus on the result than the process. This was reflected from Thai students who participated in the focus groups that they would rather not say incomplete English sentences than do it and confuse others.

It's noticeably revealed from the focus groups that the subjects, who fear of non-achievement, used lots of "should" and "must" statements. They believed a person, for examples: should speak English in complete sentences; is expected by people at work that s/he must be able to speak English; must practice harder, etc. It is obviously seen that they put high expectations on themselves in order to complete their English sentences so that they can be accepted or look good in the eyes of others. These distorted thoughts cause Thai people anxiety when they communicate with others in English.

According to Burns (1989), "should" statements are statements that a person makes to his/herself about what s/he "should" do, what s/he "ought" to do, or what s/he "must" do. This type of person tends to impose a set of expectations that will not likely to be met. When they hang on too tightly to "should" statements about themselves, they often feel guilty that they cannot live up to their expectations, leading to self-anger and resentment. These group of people often feel relieved when the task is done, and the feeling of self-doubt and anxiety begins again when the new task is encountered (Thompson, et.al., 1998).

Subjects in focus groups reported that they were afraid that they could not complete the sentences due to their lack of vocabulary and syntax knowledge, and that, they were supposed to make complete English sentences. If they could not finish the whole sentence, they were anxious that others would not understand them. Some reported that, when they could not finish the sentence, they were anxious and felt that should have said it completely. Some rather not say it if they could not finish the whole sentence; and tried to make other sentences which

causes more confusions due to a shift from the main idea and beating around the bush. This type of person who fear of non-achievement tended to use many sentences to explain one main idea.

Concern Over Mistakes

No one likes to make mistakes, but some people are more sensitive to errors than others, and that can make them more prone to anxiety.

According to Weinberg, et.al. (2015)'s research on how people's brains process mistakes help identify a person who is at risk for anxiety, when people make a mistake, a region of the brain called the anterior cingulate cortex is activated, and scientists call the increase in activity the error-related negativity (ERN). They speculate that this change in neural activity is important for humans at an evolutionary level, because making some kinds of errors can threaten safety or even survival.

A study on neurobehavioral mechanism by George A. Buzzell (Buzzell, et.al., (2017) using an electroencephalogram to monitor children's brain activity, found that social anxiety is related to a preoccupation with making mistakes.

In other words, a person does not actually fear of making mistakes, but s/he fears of what s/he believes about making mistakes which upset or produce anxiety for him/her. S/he may assume that making mistakes will lead to some terrible consequence that can't be corrected or undone. S/he may believe that making mistakes is a sign of weakness or incompetence (Antony & Swinson, 2009). This is in accordance with the results from the focus groups that the Thai participants do not want to be a fool in front of others and often feel embarrassed when they speak English incorrectly. Most of them exhibit lots of worry about making grammatical mistakes and wrong pronunciation.

Although fear of making mistakes or mistake phobia is irrational, according to Blume (2002), it could lead to an avoidance of situations that might result in a perceived sense of failure. Each mistake creates either excessive internal shame and/or embarrassment and results in further risk avoidance in the future. She suggests characteristics of people who suffer from mistake phobia, including; high risk avoidance, mental filtering or mind reading, black and white thinking, new or challenging situations avoidance, low self-esteem, pessimistic attitude about life, childhood history of severe punishment for poor performance or high self-criticism since an early age.

The other two outstanding characteristics of mistake phobia are mental filter and mind reading. Mental filtering is the selective evaluation of a complex situation with both positive and negative elements: positive mental filtering occurs when a person ignores or downplays negative aspects of a situation or criticism, which is typical of a manic reaction and indicates a skewed sense of reality; negative mental filtering prevents a person from coping with internal conflicts and emotions (Burns, 1989). These cognitive distortion, or negative thought pattern can often lead to higher levels of foreign language anxiety (Cekrlija, et.al., 2017). When thinking through a mental filter, Thai people tend to focus only on the negative aspects of a situation and filtering out all the positive ones. For example, when a student received praise for a good presentation in English class, instead of being happy with the praise, he worried of the points his missed during the presentation. In addition, when a teacher or classmates correct his/her English, a student often blame him/herself for having done wrong again.

Mind reading, another pattern of thought, is a person's belief that someone is reacting negatively toward him/her without bothering to determine if his/her assumption is correct (Burns, 1989). For example, some subjects in the focus groups reported that they kept thinking

of their trembling hands when they speak English in front of the class fearing that others will notice his/her anxiety, despite of the positive feedback from the teacher and students in the class.

It is obviously seen form the focus groups and class observations that a person who is concerned over making mistakes tends to speak haltingly, stumblingly or stutteringly. When they are corrected, they become even more nervous and repeat after the teacher's correction without fully understanding it.

Perfectionistic Cognition

Perfectionism is referred to the desire to achieve the highest standards of performance, in combination with unduly critical evaluations of one's performance (Frost et al., 1990). Perfectionistic individuals believe that they can and should achieve perfect performance, perceive anything less than perfect performance as unsatisfactory, and selectively attend to cues that their standards have not been met (Burns, 1980; Pacht, 1984). Thus, they are likely to be unsatisfied with their performance, and inexhaustibly desire to obtain greater results as they consistently set demands that they are unable to meet (Hewitt, et.al., 2003).

The first instrument was specifically designed to assess dimensions of perfectionism in clinical and nonclinical groups by hypothesizing that the construct of perfectionism is comprised of six dimensions: (a) a tendency to react negatively to mistakes and to equate mistakes with failure (concern over mistakes), (b) a tendency to doubt the quality of one's performance (doubts about actions), (c) a tendency to set very high standards and place excessive importance on these for self-evaluation (personal standards), (d) a tendency to perceive one's parents as having high expectations (parental expectations), (e) a tendency to perceive one's parents as being overly critical (parental criticism) and (f) a tendency to emphasize the importance of order and

organization (organization). The scale based on these dimensions was referred to as the Frost multidimensional perfectionism scale (FMPS) (Frost et al., 1990).

Perfectionism had been found closely related with imposter phenomenon (Hewitt, et.al., 2003; Dadau, 2014). The persons with impostor characteristic tend to constantly evaluate and criticize themselves even for the small mistake, and less appreciate their own performance (Clance, 1985; McGregor et al., 2008). Perfectionistic concern and impostor fear have been found related to stress, anxiety, low self-esteem and depression (Hewitt, et.al., 1995; Thompson, et.al., 2000; Flett & Hewitt, 2002; Flett, et.al., 2002). Often doubting about their abilities, imposters react to their worry, self-doubt and anxiety by either extreme over preparation, or by initial procrastination followed by frenzied preparation (Chrisman, et.al, 1995). The impostor phenomenon had been found associated with the perfectionistic self-presentation strategy (perfectionistic self-promotion, non-display of imperfection, nondisclosure of imperfection), an interpersonal style frequently used by some perfectionists (Hewitt et al., 2003; Ferrari & Thompson, 2006).

During the focus groups, Thai participants in the focus groups also exhibit their efforts to speak English like a native speaker by thinking hard and create sentences in mind correctly before speaking it out. They showed their nervousness when they had to speak English without preparation. Some students in the researcher's classes reported that they spent long times practicing the contents and language before their presentation day; and after they finished the presentation, they felt relieved but tended to think that their performance was not good enough as planned and that they could do better. These students tend to think hard and speak slowly. When they make mistakes and are corrected, they will repeat what the teacher has corrected many times, in order to assure they get it right.

Inferiority Feeling

According to Adlerian theory of personality (Cekrlija, et.al., 2017), inferiority is a feeling of incompetence and absolute dependence a person experiences as infants and children. His/her perception that others possess all the power, and that struggling against that kind of power is hopeless, triggers a person to feel inferior and less capable.

The relationship between inferiority and anxiety among English language learners in Mexico was found by Arias-Sais (2014). Mexicans' perceive the USA, their neighboring country, as represents economic wealth, modernity, technology, education, and better life. The socio-historical backgrounds of a person influence a foreign language learner consciously or unconsciously (Despagne, 2013). The same phenomenon is found in Thai society where people who speak a foreign language receive acceptance and admiration from others. Those who lack of foreign language skills would normally feel judged and inferior to others (Horwitz, Horwitz, & Cope, 1986; Gilbert, et.al., 2009; Wei, et.al., 2012; Arias-Sais, 2014; Cekrlija, et.al., 2017). A person's perceived language discrimination also lead to the feelings of disrespected, ignored, put down, and perceived as inferior (Wei, et.al., 2012).

According to Burns (1990), mind-reading is a cognitive distortion manifests as the inaccurate belief that we know what another person is thinking through our negative interpretations. For example, upon seeing a foreigner with an unpleasant expression, a person might jump to the conclusion that a foreigner is thinking something negative about him/her. This irrational thought is normally found among Thai people. When a foreigner gives a Thai person a puzzle look during an English conversation, a person will jump into a conclusion that his/her English is not good enough to be understood, with no sufficient facts to support the conclusion.

Thai participants in the focus groups who are shy and feel inferior to other people tended to speak less and keep ideas to him/herself than sharing with others. They believed that others could speak English better than they did. They also thought that their ideas were not important, thus, no need to say it. They reported that they felt worried or afraid to speak English in front of Thai people or their acquaintances. Some said that they were not worried to speak English to a foreigner alone.

In conclusion, people with high irrational thoughts have a tendency to preoccupy with the negative consequences relating to failure to complete the performance, making mistakes, overly self-criticism, and being judged and inferior to others, are prone to have high worries and anxieties. They always think about the learned mistakes and concern for the negative consequences in future.

Foreign Language Anxiety

Foreign language anxiety was defined by MacIntyre and Gardner (1994) as:

"… the feeling of uneasiness, worry, nervousness and apprehension experienced by non-native speakers when learning or using a second or foreign language. These feelings may stem from any second language context whether associated with the productive skills of speaking and writing, or the receptive skills of reading and listening."

Foreign language anxiety has been found to originate from a person's own sense of self, self-related cognitions as well as treats his social status and fears of losing his self-identity (Hashemi, 2011).

People associated foreign language anxiety with performance anxiety fearing of doing badly or failing in the eyes of others. Therefore, they tend to employ avoidance strategies such

as keeping quiet and becoming less involved in the group activities, as Hitlan, et.al. (2006) points out that ostracism by language results in lower work group commitment.

In addition, a high level of foreign language anxiety also corresponds with communication apprehension causing individuals to be quieter and less willing to communicate (Liu & Jackson, 2008). They also find, in compliance with Hitlan, et.al. (2006) who claim that ostracism by language leads to increased prejudice in the workplace, that people who exhibit this kind of communication reticence can also sometimes be perceived as less trustworthy, less competent, less socially and physically attractive, tenser, less composed and less dominant than their less reticent counterparts.

Foreign language anxiety is a complex phenomenon that has been found to be related to ability to communicate in foreign language. Many foreign language anxiety researchers find that foreign language anxiety can stem from within both academic and social contexts.

In academic context, Onwuegbuzie et.al. (1999) find that age, academic achievement, prior history of visiting foreign countries, prior high school experience with foreign language, expected over average for current language course, perceived scholastic competence, and perceived self-worth, has contributed significantly to the prediction of foreign language anxiety.

Emotional intelligence has also been found as related to foreign language anxiety and empathy (Ellis, 1994; Rouhani, 2008). Quite a few studies have been conducted to explore this concept that emotional intelligence serves both internal mechanism and external environment in the process of language learning (Goleman, 2001).

Foreign language anxiety is a psychological construct most likely stems from our own self or intrinsic motivator. Perceived self-worth (or self-esteem and self-efficacy) and perception about others or social self-consciousness (supervisors, peers, subordinates and public) have also

been found in many studies as intrinsic factors associating with foreign language anxiety (Sparks, et.al., 2000; Raynes, 2001; Tanveer 2007; Cho, et.al., 2009; Zhang, et.al., 2009; Anyadubalu, 2010).

Cho, et.al. (2009) finds that in Korea, public self-consciousness is related to social anxiety for people with low self-esteem, while for people with high self-esteem, public self-consciousness is related to exhibitionism. Self-esteem has been found to relate with people's communication style. A person with a strong sense of self is more likely to have an open communication style and is comfortable being around others. People with a lowered sense of self-esteem are more reserved and often retreat into themselves.

Within social contexts, foreign language anxiety may be caused by extrinsic motivators such as different social and cultural environments where people have to communicate in foreign language (Scovel, 1991; Tanveer, 2007). There is also a predisposition among people who experience foreign language anxiety because of their own concerns about ethnicity, foreignness and the like (Gardner, 2006 cited in Tanveer, 2007).

While most research suggest that foreign language anxiety is a major factor contributing to 'mental block' (Krashen, 1985 cited in Anyadubalu, 2010) which leads to inability to communicate in foreign language, other factors such as foreign language apprehension, nervousness, and negative comments from co-worker have also been found to have affected workers' ability to communicate in foreign language. Horwitz et.al (1986) who developed the widely used Foreign Language Classroom Anxiety Scale (FLCAS), classified foreign language anxiety in three components: communication apprehension which arises from learners' inability to adequately express mature thoughts and ideas; fear of negative social

evaluation which arises from a learner's need to make a positive social impression on others; and, test anxiety or an apprehension about academic evaluation.

Communication or foreign language apprehension is an individual's level of fear when associated with either real or anticipated communication with other persons. The degree of evaluation, that is, what the subject perceives to be at stake, whether or not the subject feels subordinate to their audience, how conspicuous the subject feels, the degree of unpredictability in the situation, the degree of dissimilarity between the speaker and the audience; memories of prior failures or successes, and the presence or lack of communication skills are all factors impacting the degree of communication anxiety suffered in a given situation (Holbrook, 2008).

Horwitz, et.al. (1986 cited in Tanveer, 2007) finds that when people have foreign language anxiety, the feeling of tension or nervousness centers on the two basic task requirements of language communication, listening and speaking. It also directly threatens an individual's self-concept and worldview. He believes that there is something unique to a person's experience that makes him/her nervous. In his research, Tanveer (2007) finds that feeling of anxiety, apprehension and nervousness has contributed to foreign language anxiety, and considered to exert a potentially negative and detrimental effect on foreign language communication.

It's found from the focus groups and this researcher's years of observations that Thai people who have foreign language anxiety experience some physical sensations, such as heart pounding, numbness, shakiness, mouth dryness, as well as mental sensations, such as inability to focus or relax, hesitation to speak, shyness, worries and inability to control worries, fear, discomforts, etc. These are in accordance to Andrade and Williams (2009) who found that

people with foreign language anxiety exhibited bodily reactions, like lump in throat, change in breathing, sweat, and muscle tension, and, emotional reactions like, mind went blank, have many unwanted thoughts and lose concentration.

In a nutshell, Foreign language anxiety (FLA), defined by Horwitz, et.al. (1986), is a distinct complex of self-perceptions, beliefs, feelings and behaviors related to foreign language learning and communicating which contributes to an effective filter hindering a person's ability to absorb or acquire the target language (Krashen as cited in Horwitz, et.al., 1986). A person with foreign language anxiety tends to have a performance anxiety and low self-worth.

Self-Efficacy

Self-efficacy is the optimistic self-belief in competence or chances of successfully managing and accomplishing a task, and producing a favorable outcome (Bandura, 1977; Maddux & Stanley, 1986; Lenz, 2002). Self-efficacy is important because people with high self-efficacy for a task tend to try harder at the task and experience more positive emotions relating to the task. In positive psychology, self-efficacy plays a major role in determining chances for success (Snyder & Lopez, 2001).

Bandura, A. (1977, 1994, 1997), the founder of the self-efficacy theory, defines it as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives". Self-efficacy perception determines how individuals feel, think, motivate themselves and behave. It is the most powerful determinants of behavioral change, more than either outcome expectancies or past performance, because self-efficacy expectancies determine the initial decision to perform a behavior, the effort expanded, and persistence in the face of adversity (Sherer, et.al. 1982).

Bandura (1977, 1994, 1997), introduces that the perception of efficacy is influenced by four factors; mastery experience (performance accomplishment), vicarious experience (social modeling), verbal persuasion (social persuasion), and somatic and emotional state (physiological and emotional feedback). These components help individuals determine if they believe they have the capability to accomplish specific tasks. According to his studies, people with high self-efficacy expectancies - the belief that one can achieve what one sets out to do – are healthier, more effective and more successful than those with low self-efficacy expectancies. Their beliefs about their capabilities affect development and psychosocial functioning during their life.

Self-efficacy is a situation-specific belief. However, mastery experiences are effective ways to support self-efficacy. The experiences of personal mastery contribute to efficacy expectancies generalize to actions other than the target behavior (Bandura, et.al., 1977). People are more likely to believe they can do something new if it is similarly to something they have already done well. Therefore, if they experience their own complete task or success, they are likely to move on to more challenging tasks (Bandura, 1994; Cheal & Clemson, 2001; Jackson, 2010).

Another factor affecting people's perception of self-efficacy is vicarious experience. When people observe the success and failures of other people or models who are like themselves, their self-efficacy increases when they see others succeed. On the other hand, their self-efficacy decreases when they see others fail. Vicarious experience affects self-efficacy more if a person thinks a model is more like him/herself (Bandura, 1994). Workshops, training sessions, classes or role plays, not only increase mastery experiences, but also vicarious experiences by providing observational experiences that enhance self-efficacy of the learners (Tripp, et.al. 2000).

The third factor influencing self-efficacy is verbal or social persuasion. When people receive verbal support attainment or mastery of a task from others, they tend to believe more in themselves. For example, coaches often use verbal persuasion to boost their teams' self-efficacy. On the other hand, when people are told or seen negative reaction from others, they tend to give up quickly (Bandura, 1994).

The fourth factor affecting self-efficacy is somatic and emotional states. People assess how confident they feel by interpreting their own emotional and physical state as they contemplate an action. The contemplation provides clues of the likelihood of success or failure. Pajares (2002) found that stress, anxiety, worry and fear negatively affect self-efficacy and can lead to a self-fulfilling prophecy of failure or inability to perform the feared tasks. This is in accordance to Bandura and Adams (1977) that stressful situations create emotional arousal, which in turn affects a person's perception of self-efficacy in coping with the situation. If the emotional state improves, in other words, emotional arousal or stress is reduced, a perception of self-efficacy can be expected to improve.

According to Bandura (1997), providing encouragement, positive evaluations and feedbacks, and, thinking about prior successes or positive outcomes, can boost self-efficacy. However, individual differences in past experiences and attribution of success to skill or chance result in different levels of generalized self-efficacy expectations (Sherer, et.al. 1982).

A Thai student in the focus group who exhibits low efficacy links his past failures to his inability to perform. A person who believes in his ability to communicate in English tends to have lower foreign language anxiety and speak English with more fluency.

Foreign Language Fluency

Foreign language fluency has received debates among researchers about the definition of fluency and the measurement as well (Chambers, 1997; Koponen & Riggenbach, 2000). Riggenbach's (1991) study on perceptions of fluency laid a groundwork for later studies. Fluency can be defined in two types; a temporal phenomenon and a spoken language competence.

In an early work of Fillmore (1979), fluency is defined as: the ability to talk at length with few pauses and to be able to fill the time with talk; capability of talking without hesitation and expressing message in a coherent, reasoned and semantically dense manner; and, the ability to say things in a wide range of contexts. Some researchers have defined fluency in broader concepts, for examples, Lennon (1990) defined fluency as a high command of the foreign or second language, while Sajavaara (1987) defined fluency as a communicative acceptability of the speech act, or 'communicative fit'. Lennon's (1990) definition of fluency is different from others which emphasize on, for examples, accuracy and appropriacy, etc. He looked at fluency as a performance phenomenon. Instead of defining fluency as "an impression on the listener", he pointed out that fluency reflected the speaker's ability to focus the listener's attention on his/her message by presenting a finished product. Rehbein (1987) defined fluency as the execution of speech which depends on the speaker's evaluation of the listener's expectations.

The appropriate measures of fluency have drawn attention of recent researchers. Different approaches have been used. Some researchers investigated the development of fluency longitudinally (Lennon, 1990; Towell et al.,1996); some compared fluent and non-fluent speakers (Riggenbach, 1991; Ejzenberg, 2000; Tonkyn, 2001); and some correlated fluency scores with temporal variables (Rekart & Dunkel, 1992, Fulcher, 1996).

The best predictors of fluency are speech rate, the mean length of runs, phonation-time ration and pace (Kormos & Denes, 2004). also found Moreover, the filled and unfilled pauses as well as disfluencies such as repetitions, restarts and repairs are also found as predictors of fluency (Lennon, 1990; Towell et al., 1996). The ability to speak in phrases instead of speaking word by word can also lead to the perception of fluency (Wennerstorm, 2000).

From the focus groups, Thai participants thought that foreign language fluency means the ability to express their thoughts in English at length and with few pauses, less fillings, less repetitions, less restarts and less mistakes. Those who speak English fluently report that they understand English conversation without having to translate it into Thai.

In this study, perception of language fluency of Thai research subjects will be explored using self-rating scales adapted from the above literature reviews and focus groups.

Reviews of Instrumentation for Key Variables

The study's measurement is adapted from various standardized scales to fit with the objectives of the study in the context of foreign language anxiety. Literature reviews were conducted in order to find grounded theories behind the research variables including, mindfulness, irrational thoughts, foreign language anxiety, self-efficacy, and foreign language fluency.

Mindfulness (MIND)

The Five Facet Mindfulness Questionnaire - FFMQ (Baer, et.al., 2006, 2008) is widely used in psychological research generally and in process-outcome work on MBCT and MBSR specifically (Williams, et.al., 2014).

Baer, et.al. (2006,)'s factor analytic study of five independently developed mindfulness questionnaires, which comprises of five facets - observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. These can be described as follows:

1. *Observing* is self-explanatory, covering an individual's tendency to be aware of and recognize their thoughts and feelings. In other words, it's a tendency to notice or attending to sensations that arise. The observing facet can be measured by the statements like: I pay attention to the sensations, such as the wind in my hair or sun on my face; I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

2. *Describing* refers to an individual's capacity to recognize and label with words the thoughts and feelings they experience. The describing facet can be measured by the statements like: I'm good at finding words to describe my feelings; It's hard for me to find the words to describe what I'm thinking.

3. *Acting with awareness* is an individual's ability to concentrate or stay at present and aware in the moment while ignoring or sidestepping potential distractions. This can be measured by the statements like: I find it difficult to stay focused on what is happening in the present; I rush through activities without being attentive to them.

4. *Nonjudging of experience* involves the tendency towards objective consideration of thoughts and feelings and the rejection of assigning value to these thoughts and feelings. Examples of measuring statement on nonjudgment of experience are: I make judgments about whether my thoughts are good or bad; I disapprove of myself when I have irrational ideas.

5. *Nonreactivity to inner experiences* refers to an individual's ability to remain calm and objective when faced with thoughts or feelings that may usually elicit emotional responses.

This facet can be measured by the statements like: I watch my feelings without getting lost in them; When I have distressing thoughts or images, I feel calm soon after.

The original Five Facet Mindfulness Questionnaire (FFMQ) developed by Baer, et. al. (2006) comprises of 39 items. Respondents rate their agreement that these statements represent their personality or general tendencies on a scale from 1 = *never or very rarely true* to 5 = *very often or always true* (Baer et al., 2006).

This scale has also generally been considered high valid and reliable with an alpha of 0.80 by researchers, and scores on this measure were found to correlate highly with the related constructs of openness to experience, emotional intelligence, and self-compassion (Baer et al., 2006).

Repeated administration of the test revealed high test-retest reliability and internal consistency of the FFMQ both long-form and short-form versions of it. Studies on a large-scale population including students, professionals, and clinically depressed individuals proved that FFMQ is a predictor for positive thinking, an overall uplifted mood, and subjective feelings of well-being (Baer et al., 2006; Bohlmeijer, et. al., 2011).

The authors of FFMQ as well as researchers found that construct validity of the scale is relatively high and stable for the test across cultures and different age groups. The factor analysis of the five facets of FFMQ revealed that the hierarchical structure of the factors justifies the traits that each element claims to measure (Baer et al., 2006; Baer et al., 2008)

However, Bohlmeijer, et. al. (2011) have studied the psychometric properties of FFMQ in the Dutch samples of depression and anxiety patients, and at the same time, developed a 24-items short form FFMQ (FFMQ-SF) to assess the patients with fibromyalgia. The result of confirmatory factor analyses showed acceptable model fit for a correlated five-factor structure of

the FFMQ and the FFMQ-SF. They, therefore, concluded that both the FFMQ and FFMQ-SF are reliable and valid instruments for use in adults with clinically relevant symptoms of depression and anxiety.

In this research study, 24-items FFMQ-SF will be used to measure mindfulness in the context of foreign language anxiety among Thai people.

Irrational Thoughts (IRT)

Irrational thoughts or cognitive distortions affect anxiety and depression. Derived from the literature reviews and focus groups, there are 4 irrational thoughts relating to foreign language anxiety in a Thai context - fear of non-achievement, fear of making mistakes, perfectionistic cognitions, and interiority feeling. The instrument to measure irrational thoughts in this study is adapted from the unidimensional and multidimensional standardized scales, of which the constructs or subscales represent the variables in this study, including, Hill, et. al. (2004)'s Perfectionism Inventory (PI), Frost, et.al. (1990)'s Frost Multidimensional Perfectionism Scale (FMPS), and Wei, et.al. (2012)'s Perceived Language Discrimination Scale (PLDS).

Perfectionism Inventory (PI) developed by Hill, et. al. (2004) comprises of 59 items designed to assess the multidimensional aspects of the construct of perfectionism. However, the authors suggest that PI can be used as a single measure with multiple subscales. These subscales are; concern over mistakes, high standards for others, need for approval, organization, perceived parental pressure, planfulness, rumination, and, striving for excellence. The PI has good consistency with alphas for the subscales that range from .83 to .91; and excellent stability with mean 4.5-week test-retest correlations for the 8 subscales that range from .71 to .91. The PI

established excellent convergent validity with significant correlations among the PI subscales and the subscales of two other valid multidimensional perfectionism inventories, the MPS-HF and the MPS-F. It is also correlated in predicted directions with the Fear of Negative Evaluations Scale and the Brief Symptom Inventory (Fisher & Corcoran, 2007).

In this study, two subscales of the PI; need for approval (NA) and concern over mistakes (CM) will be used to measure irrational thoughts on foreign language; fear of non-achievement (FNA), and concern over mistakes (CM).

Frost, et.al. (1990)'s Frost Multidimensional Perfectionism Scale (FMPS) originally comprises 67 items and was later reduced to 35 items measuring 6 components of perfectionism: concern over mistakes, personal standards, parental expectations, parental criticism, doubts about actions, and organization. The FMPS has good to excellent reliability, with alphas that range from .77 to .93 for the subscales. The alpha for the total scale was .90. No test-retest data were provided. It also has good concurrent validity, significantly correlating with three other perfectionism scales, the BURNS, EDI, and IBT. The overall FMPS and/or several of its subscales have good construct validity, correlating with a variety of measures of psychopathology including Brief Symptom Inventory, and the Depressive Experiences Questionnaire, and several measures of compulsivity, and with procrastination (Fisher & Corcoran, 2007).

FMPS has also drawn some criticism for its factorial instability across samples. Stöber (1998) argues that this instability may be due to an over-extraction of components and suggested only four or five underlying factors. He has investigated the nature of these factors, item responses from N = 243 participants were subjected to principal component analysis. The parallel analysis retained only four components. Varimax rotation replicated PS and O as

separate factors, whereas combining CM with D as well as PE with PC. Consequently, he suggests a reduction to four (instead of six) FMPS subscales.

Researchers use the FMPS to explore the role of perfectionism across anxiety disorders and found that social phobia was associated with greater concern about mistakes (CM), doubts about actions (DA), and parental criticism (PC) on one measure and more socially prescribed perfectionism (SP) on the other measure. Obsessive compulsive disorder was associated with elevated DA scores relative to the other groups. Panic disorder was associated with moderate elevations on the CM and DA subscales (Antony, et.al., 1998).

In this study, three subscales of the FMPS; concern over mistakes (CM), parental expectation (PE), and, doubt about actions (D) will be used to measure irrational thoughts on foreign language; concern over mistakes (CM), and perfectionistic cognition (PC).

Another irrational thought is inferiority feeling. A person feels inferior to others because he perceives himself from inside out and then externalizes it thinking there is an unjust or prejudicial treatment from others. A person may be discriminated because of their foreign language skills. Therefore, Wei, et.al. (2012) developed the 7 items unidimensional Perceived Language Discrimination Scale (PLDS) in order to measure inferiority feeling within a person regarding the foreign language skills. The fit indices of the confirmatory factor analysis confirmed that the one-factor model fit well with the data. The alpha for the total scale was .94. A test-retest reliability for the PLDS over a 2-week period was excellent with an alpha of .83. The results from the multiple-group analyses indicated that the validity for PLD was equivalent for males and females as well as for the English and Non-English groups.

Irrational thoughts relating to foreign language anxiety in a Thai context in this study is categorized into 4 mediating variables - fear of non-achievement (FNA), concern over

mistakes (CM), perfectionistic cognitions (PC), and interiority feeling (IF). The standardized scales to measure each variable are reviewed, as follow.

Fear of Non-Achievement (FNA)

The variable 'fear of non-achievement' (FNA) in this study derives from a construct definition of the need for approval in the Hill's (2004) Perfectionism Inventory (PI). It is a tendency to seek validation from others and to be sensitive to criticism.

There are 8 items on the PI which reflect need for approval or fear of non-achievement (FNA) in this study. Some statements have been adjusted to fit the context of foreign language anxiety, for examples: 'I compare my work to others and often feel inadequate' was adjusted to 'I compare my English skills to others and often feel inadequate'; 'I'm concerned with whether or not other people approve of my actions' was adjusted to 'I'm concerned with whether or not other people approve of my English skills'; 'I often don't say anything because I'm scared, I might say the wrong thing' was adjusted to 'I often don't say anything in English because I'm scared, I might say the wrong thing'.

Concern Over Mistakes (CM)

The variable 'concern over mistakes' (CM) in this study derives from a construct definition of the 'concern over mistakes' in the Hill's (2004) Perfectionism Inventory (PI) and the Frost, et. al.'s (1990) Frost Multidimensional Perfectionism Scale (FMPS). It is a tendency to experience distress or anxiety over making a mistake (Hill, 2004) and react negatively to mistakes and to equate mistakes with failure Frost, et.al. (1990).

There are 8 items on the PI and 9 items on the FMPS which reflect concern over mistakes. However, item 6 on the PI and item 21 on the FMPS is the same. Therefore, there are only 16 items on the instrument on this study to measure 'concern over mistake'. Some statements have been adjusted to fit the context of foreign language anxiety, for examples: 'I am particularly embarrassed by failure' was adjusted to 'I am particularly embarrassed by failure to speak English'; 'If someone points out a mistake I've made, I feel like I've lost that person's respect in some way' was adjusted to 'If someone points out a mistake I've made in English, I feel like I've lost that person's respect in some way.'; 'I over-react to making mistakes' was adjusted to 'I over-react to making mistakes in English'.

Perfectionistic Cognitions (PC)

The variable 'perfectionistic cognitions' (PC) in this study derives from a construct definition of the parental expectation (PE) and Doubts about Actions (D) in the Frost, et. al.'s (1990) Frost Multidimensional Perfectionism Scale (FMPS). It is a tendency to perceive one's parents or others as having high expectations and doubt the quality of one's performance.

There are 5 items on parental expectation and 4 items on doubt about actions on the FMPS which reflect perfectionistic cognition in the study. However, the word 'parents' has been considered as too specific. This researcher decided to use the word 'others' in order to broaden the context to cover other people who might have influences on Thais who suffer from a foreign language anxiety. Some statements have been adjusted to fit the context of foreign language anxiety, for examples: 'My parents set very high standards for me' was adjusted to 'People set very high standards for my English skills' ; 'My parents wanted me to be the best at everything' was adjusted to 'People want me to do best in English'; 'I tend to get behind in my work because

I repeat things over and over' was adjusted to 'I tend to get behind in my English communication because I repeat things over and over'.

Inferiority Feeling (INF)

In a society, like Thailand, where people live up to standardized expectations from others, a person may be discriminated by his foreign language skills. He may often be criticized because of his accent, and ability to express his thoughts in foreign language. Discrimination based on language and accent can occur on daily basis in locations such as the shopping center, at school, or in the workplace

A perceived language discrimination was found to have a strong relationship with the feelings of inferior, and can be a problem in most society around the globe. Therefore, Wei, et.al. (2012) developed the 7-items Perceived Language Discrimination Scale (PLD) of which its validity was supported with positive associations between perceived language discrimination with depression, anxiety, self-esteem, life satisfaction, perceived racial discrimination, perceived English proficiency, and social desirability. In this study, the 7-items PLDS on a 1-5 Likert scale will be used to measure an irrational thought of inferiority feeling (IF).

Foreign Language Anxiety (FLA)

The scale used to measure foreign language anxiety in this study is adjusted from the Foreign Language Classroom Anxiety Scale (FLCAS), a 33-item unidimensional scale developed by Horwitz, et.al. (1986) and later adjusted to 28-item scale by Panayides and Walker (2013).

According to Horwitz et. al. (1986), language learning anxiety is an amalgamation of various incapacitating psychological as well as behavioral factors that go with language learning situations influenced by the unique process which is inherent in language learning. They proposed three types of performance anxieties relating to foreign language anxiety (FLA) as communication apprehension, test anxiety and fear of negative evaluation. These three forms of anxieties are fundamental to the concept of FLA and together they conspire to inhibit learning as the learner attempts to learn and use a language.

The FLCAS was intended to measure foreign language learners' level of anxiety while learning a language in the classroom. A higher score indicates a higher level of FLA. Reliability of the scores obtained from the instrument based on data collected from 108 respondents was quite high with Cronbach's alpha of .93 (N=108) (Horwitz, 1986). In addition, test-retest reliability carried out with a sample of 78 participants over a period of eight weeks was ascertained to be r=.83 ($p < .01$) (Horwitz, 1991). Criterion related studies showed that FLCAS scores had the highest correlation with test anxiety, 0.58. Since then the majority of studies have relied on alpha (Panayides & Walker, 2013) and principal components analyses to investigate the validity of the FLCAS.

The Greek version of FLCAS was developed by Panayides and Walker (2013) in order to clarify two discrepancies found in the literature; the factor structure of the scale, and, whether test anxiety is a component of FLCA. The Greek version of the FLCAS was administered to a sample of 304 senior high school EFL students. Results showed that after removing five items which fitted the Rasch Rating Scale model poorly, the remaining 28 items formed a unidimensional scale, one component of which is test anxiety. The degree of reliability was high. Semantic analysis of the items revealed that one of the reasons was the inclusion of many

parallel items. The Rasch person-item map showed that a second reason was the narrow coverage of the construct by the items.

Self-efficacy (SE)

The authors, Schwarzer and Jerusalem, (1995) have developed the 10-item General Self-Efficacy (GSE) scale, from their original scale in 1981, to assess optimistic self-beliefs to cope with a variety of difficult demands in life.

GSE, a self-report measure of self-efficacy, is correlated to emotion, optimism, and work satisfaction. Ten items are designed to tap perceived self-efficacy construct. Each item refers to successful coping and implies an internal-stable attribution of success. It is an operative construct related to subsequent behavior and, therefore, is relevant for clinical practice and behavior change.

The GSE is a unidimensional scale with good reliability with its Cronbach's alphas ranged from .76 to .90, with the majority in the high .80s. Its validity is reported high in numerous related studies with positive coefficients to favorable emotions, dispositional optimism, and work satisfaction, and negative coefficients to depression, anxiety, stress, burnout, and health complaints. In studies with cardiac patients, their recovery over a half-year time period could be predicted by pre-surgery self-efficacy (Schwarzer & Jerusalem, 2013).

Foreign Language Fluency (FLU)

In order to minimize perceptual mismatches between teachers and learners which affect learning success or failure, Babaii, et.al. (2015) have developed a formative self-assessment tool to assess a person's own speaking performance in 10 aspects. The learners were

provided with the scoring criteria for self-assessment. The teachers were also asked to assess the learners' performance according to the same criteria. It is found that providing the learners with the scoring criteria and the follow-up practice session minimizes the mismatches between the learner and the teacher's assessment.

The 10 criteria include fluency (without pauses, hesitation, and false starts), grammar (accuracy and variety of structures), vocabulary (appropriateness and variety of expressions), pronunciation (stress, rhythm, and intonation), communicative effectiveness (clarity of ideas and comprehensibility i.e., understandability, of speech), topic management (topic relevance, topic coverage, and adequacy of details and examples), confidence (anxiety-free speech), organization (initiation, development, termination/ interconnectedness of ideas), strategy use (avoiding unfamiliar language and compensating by using familiar language), and, time management (timing your talk).

In this study, the Babaii, et.al. (2015)'s 10-item Speaking Self-Assessment on a 1-5 Likert scale is used to assess foreign language fluency.

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Study II

Relationships Among the Key Variables

This study will explore relationships among the key variables, mindfulness, fear of non-achievement, concern over mistake, perfectionistic cognition, inferiority feeling, foreign language anxiety, self-efficacy, and foreign language fluency.

Mindfulness and Foreign Language Anxiety

For decades, mindfulness have received more attention from researchers and have been found to significantly lower negative emotions, stress, and mental distress and greater positive emotions and life satisfaction (Schutte & John, 2011; Wang, et.al., 2014; Bao, Xueming, et.al., 2015), while on the other hand, enhance emotion regulation, attentional control, self-awareness, and self-regulation (Holzel, et.al, 2011).

In Buddhist teaching, mindfulness reduces stress and anxiety by being mindful and aware of the present moment. When a person deliberately pays his attention on one thing at present moment, his mind is occasionally free from the "*I, me, mine"* of the personality belief or the ego. When a person is freed of the thought of existing 'self', his mind is free from suffering. But when he stops being mindful, his mind returns to its unfocused state or suffering (Vajiramedhi, 2012).

A Neuro-scientific researcher explains how suffering occurs by the two neural systems. The first system is based on the neurotransmitter dopamine which become more active when a person encounters thing that is linked to rewards in the past (Hanson, 2009). On the other hand, disappointment and discontentment also lower dopamine levels. This can be

explained by Buddhist concept of 'craving' and 'aversion' which cause Dukkha or suffering (Hart, 1987). The second system is based on several 'pleasure chemicals' such as opioids, endorphins, oxytocin and norepinephrine, which when triggered, will prompt a person to pursue those rewards again, and strengthens the behaviors that make him successful in getting the rewards. However, pleasant desire or even disappointment, frustration and discouragement itself can be unpleasant experiences and leads to suffering, dissatisfactions, stress, pain and misery.

Mindfulness has played an important role in the alleviation of mental disorders, especially anxiety and depression (Ramel, et.al., 2004; Toneatto, et.al., 2007; Li, 2018). It helps a person to learn in a more adaptive ways to respond to craving or aversion by focusing on the present moment and non-judgmentally and accepting towards all mental states. Toneatto, et.al. (2007) found mindfulness meditation help problem gamblers learn to cope with gambling relevant cognitive distortions. The Buddhist monk, Venerable Phra Shakyavongsvisuddhi (Anil Sakya, 2017-1018) works with inmates in Thai prison for nine months, and 2,000 inmates in the Thai prisons throughout the country. It's been testified by prison wardens, judges and the inmate themselves that mindfulness cognitive transformative therapy (CTT) have significantly reduce stress and violence in the prisons and reduce repeated criminals.

Recent studies have also reported that mindfulness-based interventions help improve cognitive functioning in older adults (Mallya & Fiocco, 2015; Berk, et.al., 2017; Wong, et.al., 2017).

Many research found that the mindfulness-based therapies, both long-term and short-term, significantly reduce stress, anxiety and depression (Broderick, 2005; Houghton, 2008; Yook, et.al, 2008, Sharma, et.al., 2012; Spowart, 2014), rumination and worry (Ramel, et.al., 2004, Borynski, 2006; Edwards, 2012; Hindman, 2013; Conley, et.al, 2018), and increase self-

compassion (Edwards, 2012) among patients and research subjects in diverse population of all cultures.

Mindfulness has been found to affect writing anxiety and writing performance measures among college students (Britt, 2011). She revealed that students in the mindful-breathing group experienced a reduction in writing apprehension and improve narrating writing performance because breath-focusing activities foster inner attention and help students comprehend better and experience enhanced creativity while in a state of relaxed alertness (Hendricks & Roberts, 1977, cited in Britt, 2011).

This study aims to explore the direct and indirect influence bet ween mindfulness and foreign language anxiety mediated by irrational thoughts.

Mindfulness and Irrational Thoughts

Mindfulness meditation has been found effective in the alleviation of emotional distress, especially anxiety and depression in recent years. Mindfulness meditation helps a person to learn more adaptive ways of responding to aversive mental states by encouraging a focus on remaining present, non-judgement, and acceptance towards all mental states. In comparison to cognitive therapy which has no attempt to directly challenge or restructure cognition, mindfulness therapy provides individuals with a unique practice that can assist them in reacting less impulsively to their own thinking (Toneatto, et.al., 2007).

There are evidences that the mindfulness significantly reduce rumination and worry (Ramel, et.al., 2004, Borynski, 2006; Edwards, 2012; Hindman, 2013; Conley, et.al, 2018), and increase self-compassion (Edwards, 2012) among patients and research subjects in diverse population of all cultures. Wong, et.al. (2017) found long-term positive effects of mindfulness

on older adults with mild cognitive impairment who meditate more for 59 weeks. Mindfulness has been found to have some effects on cognitive distortions including illusions of control, superstitious beliefs, and interpretive biases, among pathological gamblers (Toneatto, et.al., 2007). However, there are quite limited research published in terms of a relationship between mindfulness and different types of cognitive distortions or irrational thoughts in particular.

Mindfulness and Fear of Non-achievement

When people fear of failure or fear of non-achievement, they develop bias that causes them to filter out negative information and look only for information that confirms their perfection. The human brain has a build-in 'negativity bias' that primes an individual for avoidance and causes suffering (Hanson, 2009). People react to their fear of non-achievement by over-striving for achievement or on the opposite, self-protecting. Fear of non-achievement has been found to render the academic process an uncertain one for students marked by anxiety, low resilience, and vulnerability to learned helplessness (Martin & Marsh, 2003).

In recent research, mindfulness has been found to assist university students, who participated in an 8-week mindfulness-based stress reduction program (MBSR) for academic evaluation anxiety, to reduce academic evaluation anxiety and improved self-confidence after the intervention. The participants report that MBSR help them face the fear of failure better by recognizing five salient patterns of meaning: (1) finding an inner source of calm, (2) sharing a human struggle, (3) staying focused in learning situations, (4) moving from fear to curiosity in academic learning, and (5) feeling more self-acceptance when facing difficult situations (Hjeltnes, et.al., 2015; Dundas, et.al., 2016).

Mindfulness and Concern over Mistake

There is limited research published in terms of a relationship between mindfulness and cognitive distortions or irrational thoughts, but not on the thought on concern over mistake, particularly.

However, the relationship between mindfulness and fear of making mistakes can be explained that when people are afraid of making mistakes because they assume that making mistakes will lead to some terrible consequence that can't be corrected or undone. They may believe that making mistakes is a sign of weakness or incompetence (Antony & Swinson, 2009). Most people's mind wanders away from the present toward the past and future all the time (Mason, et.al., 2007). Therefore, their own interpretation of the mistakes that happened in the past, and, might or might not happen in the future create concern over mistakes and distract them from the present task at hand (Christoff et.al., 2009; Killingsworth & Gilbert, 2010).

Mindfulness and Perfectionistic Cognition

Mindfulness involves taking a non-judgmental approach and perfectionism involves critical self-evaluation, therefore, a person who are high in perfectionism may struggle to achieve mindfulness and to practice meditation. Handorf (2012) found significant decreases in anxiety among high perfectionistic students who learn mindful meditation or present-moment joy training.

Although conceptually, mindfulness would weaken perfectionism, there is a paucity of research in this area. Mindfulness has been found to lower the levels of rumination, avoidance, and perfectionism in some study using mindfulness-based therapies (Crane, et.al, 2008; Williams, 2008; Perolini, 2010).

Mindfulness and Inferiority Feeling

People can be biased by expectations driven by automatic associations which impair the ability to see things as they as. Mindfulness meditation helps individuals overcome these automatic associations by reducing strong negative emotional reactions (Lueke & Gibson, 2015). They have also found in their recent research that mindfulness meditation produces less discrimination in races and age groups (Lueke & Gibson, 2016). Through mindfulness practice, individuals learn to cultivate awareness and view thoughts and feelings as transient mental events that are separate from the self, which inhibits the natural tendency toward automatic reaction and evaluation (Bishop, et.al., 2004), and instead, reduce implicit bias involves attention to only the physical sensations being experienced in the moment, which weakens automatic associations (Lueke & Gibson, 2015).

Irrational Thoughts and Foreign Language Anxiety

Past research has demonstrated that depressed individuals tend to distort their recall of positive feedback in a negative fashion.

In most recent studies, several factors have been identified among foreign language learners who experience both facilitative (FSA) and debilitative speaking anxiety (DSA) on their foreign language learning. Those include language barriers, negative attitudes and intercultural communication apprehension (Mulyono, et.al., 2019; Yang, et.al., 2015). These factors have interfered with their speech performance, not only when the learners generate ideas but also during speaking, but under other conditions (i.e. moderate speaking anxiety), it assisted the learners to perform better orally. Some negative attitudes, such as fear of being in public and shyness, unwelcoming gestures and facial expressions, interlocutors' corrections, and high

expectations towards the learners have contributed to students' feeling of anxiety when communicating with people on a daily basis (Mulyono, et.al., 2019).

Fear of Non-achievement and Foreign Language Anxiety

The anxiety in linguistic performance has been found to involve such factors as fear of negative evaluation and fear of failure, and numerous other factors (Horwitz & Young, 1991). Anxious foreign language learners tend to become alarmed about the consequences of inadequate performance or other's evaluation of their performance. They often put unrealistic demands on themselves and unmet expectation is considered a failure. Tzoannopoulou (2016) found a negative correlation among language anxiety, fear of failure, fear of negative evaluation, and language performance.

Concern over Mistake and Foreign Language Anxiety

In a research study of Gregersen and Horwitz (2002), anxious foreign language learners not only noticed errors but lamented them. Some participants reported that they made a lot of mistakes and mistakes made them nervous. On the other hand, some participants reported that they made some grammatical errors but they weren't nervous.

Perfectionistic Cognition and Foreign Language Anxiety

A perfectionistic person wishes for the highest performance combined with critical evaluations of performance (Frost, et.al., 1990). High levels of perfectionism are correlated with various disorders such as social anxiety disorder (Juster, et.al., 1996; Lundh & Ost, 1996), high levels of worry (Chang, et.al., 2007; Stober & Joormann, 2001), obsessive-compulsive disorder

(Frost & Steketee, 1997), panic disorder with agoraphobia (Saboonchi, et.al., 1999), and low levels of mindfulness (Perolini, 2012).

Gregersen and Horwitz's (2002) study found a relationship between language anxiety and perfectionism. Anxious and non-anxious language learners differ in their personal performance standards, procrastination, fear of evaluation, and concern over errors. They found that perfectionistic students often demonstrate long delays in completing assignments or repeatedly start them because they believe that their work must be perfect from beginning to end. This is consistent with this researcher's observations in the focus groups of Thai students that anxious students delay expressing their comments or opinions in English in class and start their sentences again to be certain that they are all perfect English.

A recent study confirmed that the two dimensions of perfectionism, adaptive and maladaptive, related to foreign language classroom anxiety (FLCA) differently (Wang, et.al., 2018). In their experiment, general anxiety, perceptions of academic performance and self-reported English Fluency were controlled. The result revealed that maladaptive aspect (perfectionistic discrepancy) was a significant predictor of FLCA, while adaptive aspect (perfectionistic standards) was not.

In a current study, the examination of the relationship between perfectionism and English language achievement among high school third graders is conducted in Iran, mediated by foreign language classroom anxiety, and found insignificant correlations between perfectionism and participants' English achievement while foreign language classroom anxiety was found to be significantly and negatively correlated with English achievement (Dordinejad & Nasab, 2013).

Inferiority Feeling and Foreign Language Anxiety

In the study of Gregersen and Horwitz's (2002), a relationship between language anxiety and fear of evaluation are found. High anxious students in their study reported that they fear the evaluation of their peers and the subsequent possibility of appearing foolish. They tend to compare themselves negatively with their classmates and worry about how others perceive them. Anxious and non-anxious foreign language learners can be clearly distinguished by their perceived evaluation by others. In recent research, fear of negative evaluation has been found to negatively affect foreign language anxiety (Tzoannopoulou, 2016; Aydin, 2016; Sila, 2010).

Foreign Language anxiety and Self-Efficacy

Foreign language anxiety had been found to have a negative relationship with self-efficacy (Torres & Turner, 2006; Cheng, 2013; Anyadubalu, 2010; Öztürk & Saydam, 2014; Merc, 2015).

Self-Efficacy and Foreign Language Fluency

Self-efficacy has been found as a strong indicator of foreign language fluency and academic achievement in numerous studies (Zimmerman, et.al., 1992; Asakereh & Dehghannezhad, 2015; Su, 2017). This is because people with high degrees of self-efficacy tend to put more effort in order to perform the required tasks (Bandura, 1986; Pajares, 2000). Su (2017) found that students with high vocabulary self-efficacy actively evaluated their performances and past experiences in order to improve their use of vocabulary in speaking. These students focused on conveying messages in speech and usually reached the highest levels of speech comprehensibility.

Recent research also found that foreign language anxiety affects foreign language fluency (Young, 1986; Spark, et.al., 1997; Bailey, et.al., 1998; Onwuegbuzie, et.al., 1998, 1999; Bailey, et.al., 2000; Chen & Lin, 2009; Anyadubalu, 2010). It occurs during input (listening and reading), processing and output stages (speaking and writing) (Onwuegbuzie, et.al., 1999).

Some recent research also found relationship between foreign language anxiety, self-efficacy and foreign language fluency (Chen and Lin, 2009; Anyadubalu, 2010).

While many studies found significant relationship between foreign language anxiety and foreign language fluency; and self-efficacy and foreign language fluency, this study want to explore whether foreign language anxiety directly or indirectly through self-efficacy, influences foreign language fluency.

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Conceptual Framework

From the review of literature and focus groups, this study aims to find relationships of variables; mindfulness, irrational thoughts (fear of non-achievement, fear of making mistakes, perfectionistic cognitions, inferiority feeling, learning difficulty perception), foreign language anxiety, self-efficacy, and foreign language fluency. The conceptual framework for this study, which fully identified mediation model showing the possible direct and indirect impact of mindfulness on foreign language anxiety mediated by irrational thoughts; as well as the possible direct impact of foreign language anxiety on self-efficacy; and self-efficacy on foreign language fluency, is depicted in the following Figure 2.1.

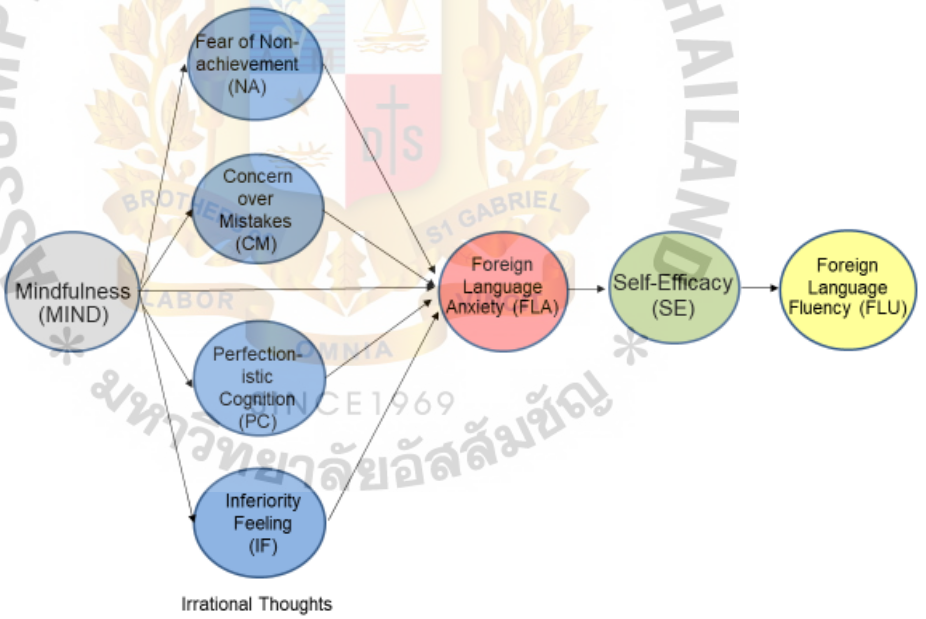

Figure 2.1: ***The proposed conceptual framework for this study***

Study III

The Current Investigation

The literature reviews of the eight variables in the proposed conceptual framework of this study derived research questions and hypotheses for further investigation.

Categories of the Key Variables

By investigating mediational processes that clarify how the mindfulness intervention influences foreign language anxiety, this study not only further the understanding of impact factors on foreign language anxiety, but also identify alternative, more efficient, intervention strategies to reduce foreign language anxiety. In the current investigation, the models of causal relationship consisted of latent and observed variables in the form of exogenous, mediator, and endogenous variables. The following section presents the breakdown of the categories of variables and their means of measurement in this research.

Exogenous variable

The exogenous variable of this study is 'mindfulness' (MIND). Mindfulness is measured and discussed in terms of a person's awareness of physical and mental sensations.

Mediator variables

The mediator variables utilized in this study is 'irrational thoughts' (IRT) which comprises of 4 components: fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognitions (PC), and interiority feeling (INF). This study attempted to examine

the 4 irrational thoughts that are believed to indirectly affect the relationship between mindfulness and foreign language anxiety.

Endogenous variables

The primary endogenous variable in this study was 'foreign language anxiety' (FLA). However, in the conceptual framework FLA is partially endogenous because FLA is influenced by mindfulness (MIND) and 4 irrational thoughts (FNA, CM, PC, and IF); and partially exogenous because it affects self-efficacy (SE) as well. In the same way, self-efficacy (SE) is partially endogenous because SE is influenced by FLA; and partially exogenous because it affects foreign language fluency (FLU).

Research Questions

This study aims to investigate the following:

1. What are the psychometric properties of the research instrument adopted from standardized scales and the Thai translated version of the instrument?
2. What are the direct and indirect structural relationships, being mediated by 4 irrational thoughts (fear of non-achievement, concern over mistake, perfectionistic cognition, inferiority), between mindfulness and foreign language anxiety of Thai people?
3. What are the relationships between foreign language anxiety and self-efficacy, and between self-efficacy and foreign language fluency?
4. To what extent the prediction model can explain the pattern of structural relationships hypothesized between mindfulness, irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency?

5. Does the mindfulness-based intervention, developed for this study, effectively reduce foreign language anxiety and increase foreign language fluency of the Thai participants?

Research Hypotheses

The following research hypotheses were generated for testing in this study.

H1: Mindfulness directly influences foreign language anxiety among Thai people.

H2: Mindfulness indirectly influences foreign language anxiety among Thai people by being mediated by irrational thought which comprises of fear of non-achievement, concern over mistakes, perfectionistic cognitions, and interiority feeling.

H3: Foreign language anxiety negatively affects self-efficacy.

H4: Self-efficacy positively affects foreign language fluency.

H5: The prediction model can explain the pattern of structural relationships hypothesized between mindfulness, irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency.

H6: Mindfulness-based intervention effectively reduces the participants' levels of foreign language anxiety and increase foreign language fluency.

CHAPTER III

METHODOLOGY

Overview of the Chapter

The primary purpose of the current study was to investigate and evaluate the direct and indirect influences of mindfulness on foreign language anxiety, mediated by 4 irrational thoughts in the Thai context. This study also aims to explore relationships between foreign language anxiety, self-efficacy and foreign language fluency.

This chapter is divided into 3 studies.

Study I comprises of research design overview, participants in the study, instrumentation, instrument translation procedure, data collection procedure, testing of the instrument, and data analysis. This research study is designed to develop a psychometrically viable scale for present study on Thai foreign language learners and users. The instrumentation is comprised and adjusted from various standardized scales to measure the variables. The measurement scale is translated into Thai by the panel of experts and used to collect data among the participants via paper and on-line based channels. Data collected is used to test validity and reliability of the scale.

Study II is designed to investigate the direct and indirect influences of mindfulness on foreign language anxiety, self-efficacy and language fluency, by using multi-model path analysis via structure equation modeling (SEM).

Study III includes experimental research design to investigate the participants in the controlled and experimental groups using the newly structured mindfulness intervention for this study. Data collection procedure, instrumentation, data collection during the intervention, and data analysis will be presented in this study.

Study I (Psychometric Properties of the Instrument)

Research Design Overview

In order to meet the purposes of this study, the current investigation is divided into three interrelated studies.

Study I (phase I) involves the adaptation of items statements used in this research instrument based on various standardized scales from the literature review to fit the context of this study on foreign language anxiety, as well as the translation of the scale in Thai to collect data from the Thai samples. The psychometric pre-testing of the scale will be conducted in order to test the validity and reliability of the scale using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA).

Study II (phase II) involves the testing the models and relationships among measured variables using the path analysis via structural equation modeling (SEM). The proposed path model will be compared to other modified models to find the best fit model for the data set.

Study III (phase III) involves the experiment to establish cause and effect of mindfulness, an independent variable, on foreign language anxiety and other dependent variables. The participants in the controlled and experimental groups will be investigated using the newly structured mindfulness intervention for this study.

Participants

The initial pool of 112 items in 1-5 Likert format were adopted to produce self-report questionnaires for this study aiming to measure variables in the research framework. The

translated instrument will be pre-tested on 30 students at Kru Kate Language School to see if there is confusion about any items.

Then, a panel of three content validity and translation expert judges will evaluate and provided feedback for the Thai-translated item pool.

After revisions of the item pool, a large undergraduate student samples from Faculty of Science & Art, Burapha University, Chantaburi Campus; Faculty of Pharmacy, Silpakorn University, Sanam Chandra Palace Campus, Nakorn Pathom; and office worker samples from Bangchak Corporation PCL.; SCG Chemicals Co., Ltd.; and Government Housing Bank; as well as interested public, were invited to voluntary participate in completing the item pool and a battery of the online questionnaires.

Since study I and II in this research employ factor analysis and path analysis, a large-sample technique must be selected through convenience sampling.

Sample Size

In study I, the exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were done to test the psychometric properties of the scale. A large sample size was required for precision, statistical power and replicability of the results (Kyriazos, 2018). The appropriate sample size of 3 to 20 times the number of variables and absolute ranges from 100 to over 1,000 (Mundfrom, et.al., 2005). As rules of thumb, sample of 50 is considered very poor, 100 as poor, 200 as fair, 300 as good, 500 as very good. However, a sample of 300 cases has been suggested in many studies (Costello &Osborne, 2005; Tabachnick & Fidell, 2007; Kline, 2011; Bandalos, 2014). Therefore, the sample size of 500 is considered in this study.

Instrumentation

The research instrument for this study is adapted from the insight information derived from the literature review of foreign language anxiety and other related influenced factors. There are 112 items on the measurement tools which reflect one exogenous variable, mindfulness (MIND), 4 mediator variables; fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognitions (PC), and interiority feeling (INF); and 3 endogenous variables, foreign language anxiety (FLA), self-efficacy (SE) and foreign language fluency (FLU).

The questionnaire comprises of 6 parts as follows:

Part 1: Participant's personal information – comprises of 11 questions on gender, age, occupation, marital status, family order, education level, monthly income, first language, foreign language, religion and experience in meditation.

Part 2: Mindfulness. The 24 items on the instrument to measure mindfulness were adopted from The Short Form Five Facet Mindfulness Questionnaire (FFMQ-SF) developed by Baer, et. al. (2006).

FFMQ is designed to assess the five factors associated with the tendency to be mindful in everyday activities (i.e., Acting with Awareness, Describing, Non-Judging of Inner Experiences, Non-Reactivity to Inner Experiences, and Observing). Respondents will rate their agreement that these statements represent their personality or general tendencies on a scale from 1 = Never or rarely true 2 = Rarely true 3 = Sometimes true 4 = Often true 5 = Very often or always true.

Internal consistencies of the FFMQ subscales based on Cronbach's Alpha were as follows: Observing = .83, Describing = .91, Acting with awareness = .87, Non-judging of inner experiences = .87, and Non-reactivity to inner experiences = .75, with full scale internal consistency of .86 in a nonmeditating sample and .95 in a meditating sample.

In the instrument in this study, some statements were slightly adjusted to relate to the context of foreign language or English in this study. There are 5 constructs on FFMQ-SF including; observing (items 6, 10, 15, 20), describing (items 1, 2, 5R, 11R, 16), acting with awareness (items 8R, 12R, 17R, 22R, 23R), non-judging of inner experience (items 4R, 7R, 14R, 19R, 24R), and nonreactivity (items 3, 9, 13, 18, 21).

Part 3: Irrational thoughts. There are 4 sub-categories of irrational thoughts: fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognition (PC), and inferiority feeling (IF), totaling 40 items.

The measurement items on the three sub-categories of irrational thoughts; fear of non-achievement, concern over mistakes, and, perfectionistic cognition, are adjusted from the Perfectionism Inventory (PI, Hill, et.al., 2004) and Frost Multidimensional Perfectionism Scale (FMPS, Frost, et.al., 1990). Another sub-category, inferiority feeling, is adjusted from the Perceived Language Discrimination Scale (PLDS, Wei, et.al., 2012).

The 59- items Perfectionism Inventory (PI, Hill et al. (2004) assesses perfectionism as an eight-dimensional construct composed of Concern over Mistakes (CM), High Standards for Others (HSO), Need for Approval (NA), Organization (O), Perceived Parental Pressure (PPP), Planfulness (P), Rumination (R), and Striving for Excellence (SE). The scores are based on a 5-point scale (1 = strongly disagree to 5 = strongly agree). The 8 subscales yield a mean of 3.22

and SD of .77 for the 366 undergraduate samples. The internal consistency is reported high, ranging from .83 to .91 for all of the subscales; and excellent stability with mean 4.5-week test-retest correlations for the 8 subscales that range from .71 to .91. (Hill et al. (2004; Fisher & Corcoran, 2007).

The Frost Multidimensional Perfectionism Scale consists of six subscales: CM, which measures negative reactions to mistakes, PS, which reflects the setting of high standards, PE, which measures perceived parental expectations of excellence, PC, which assess levels of parental criticism, D, which indicates a person's self-doubt accomplishments, and O, which assesses the importance of orderliness. The 35 items FMPS uses a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree) to measure the 6 subscales excluding O. Good internal reliability has been reported: FMPS total = .90: CM=.88; PS=83; PE=.84; D=.77; PC=.84; and O=.93. Convergent validity of the FMPS has been demonstrated through positive, statistically significant correlations between FMPS and other perfectionism scales, like the Burns Perfectionism Scale (Burns, 1980) (Frost et al., 1990).

The Perceived Language Discrimination (PLD) scale comprises of seven items. Validity was supported by moderate positive associations of perceived language discrimination with depression (r = .35) and anxiety (r = .36), and a large positive association with perceived racial discrimination (r = .62), as well as small negative associations of perceived language discrimination with self-esteem (r = -.24) and life satisfaction (r = -.26), a moderate negative association with perceived English proficiency (r = -.49), and a relatively weak association with social desirability (r = .14). PLD added significant incremental variance in predicting depression and anxiety over and above perceived racial discrimination and perceived English proficiency. The measurement invariance and validity of the PLD between males and females as well as

between the English and Non-English groups is reported high. The estimated 2-week test–retest reliability (N = 31) was .83.

In Part 3 of the measurement in this study, items 1-8 are adopted from Hill, et. al. (2004)'s perfectionism inventory (PI), need for approval construct, to measure Fear of Non-Achievement (FNA) sub-scale, totaling 8 items.

To measure concern over mistakes (CM) sub-scale, items 9-16 and items 17-24 are adopted from concern over mistakes construct in Hill, et. al. (2004)'s Perfectionism Inventory (PI), and Frost, et.al. (1990)'s Frost Multidimensional Perfectionism Scale (FMPS) respectively, totaling 16 items.

There 9 items in part 3 to measure perfectionistic cognition (PC) sub-scale. Item 25-29 and item 30-33 are adopted from the two constructs of parent's expectation and doubts about actions in Frost, et.al. (1990)'s Frost Multidimensional Perfectionism Scale (FMPS).

Item 34-40 are adapted from Wei, et.al. (2012)'s Perceived Language Discrimination Scale (PLDS) to measure inferiority feeling (IF) sub-scale, totaling 7 items.

There are 40 items in part 3 to measure 4 sub-scales that represent irrational thoughts believed to influence foreign language anxiety. Every statement on the instrument is adjusted to fit the context of foreign language or English in this study. Respondents will rate their agreement that these statements represent their personality or general tendencies on a scale from 1 = Strongly disagree, 2 = Disagree somewhat, 3 = Neither agree nor disagree, 4 = Agree somewhat, 5 = Strongly agree.

Part 4: Foreign language anxiety. The 28 items in part 4 on the instrument to measure Foreign language anxiety (FLA) were adopted from The Short Form Foreign Language

Classroom Anxiety Scale (FLCAS), developed by Panayides and Walker (2013). Originally developed by Horwitz, et.al. (1986), the FLCAS is intended to measure foreign language learners' level of anxiety while learning a language in the classroom. A higher score indicates a higher level of FLA. Reliability of the scores was quite high with Cronbach's alpha of .93 (N=108) (Horwitz, 1986). In addition, 8 weeks test-retest reliability was ascertained to be r=.83 ($p < .01$) (Horwitz, 1991). Criterion related studies showed that FLCAS scores had the highest correlation with test anxiety, 0.58. Since then the majority of studies have relied on alpha (Panayides & Walker, 2013) and principal components analyses to investigate the validity of the FLCAS.

Therefore, in this study, the 28-items FLCAS will be used on a 1-5 Likert scale to measure foreign language anxiety. Respondents will rate their agreement that these statements represent their personality or general tendencies on a scale from 1 = Strongly disagree, 2 = Disagree somewhat, 3 = Neither agree nor disagree, 4 = Agree somewhat, 5 = Strongly agree.

However, some statements will be slightly adjusted to fit the context of foreign language anxiety in a Thai society by broaden it to cover both classroom and social settings. For examples: 'I am usually at ease during tests in my class' was adjusted to 'I am usually at ease during an English conversation'; 'I start to panic when I have to speak without preparation in English class' was adjusted to 'I start to panic when I have to speak English without preparation'; 'I get upset when I don't understand what the teacher is correcting' was adjusted to 'In an English conversation, I get upset when I don't understand what other is correcting'; and, 'I can feel my heart pounding when I'm going to be called on in English class' was adjusted to 'I can feel my heart pounding when I'm going to speak English to others'.

Part 5: Self-efficacy. The 10 items on the instrument to measure self-efficacy were adopted from the General Self-Efficacy (GSE) scale developed by Schwarzer and Jerusalem, (1995, 2013). The GSE is a unidimensional scale with good reliability. Its Cronbach's alphas ranged from .76 to .90, with the majority in the high .80s. Criterion-related validity is documented in numerous correlation studies where positive coefficients were found with emotions, optimism, and work satisfaction. Negative coefficients were found with depression, anxiety, stress, burnout, and health complaints.

In this study, the 10-item GSE scale on a 1-5 Likert scale is used to assess self-efficacy. Respondents will rate their agreement that these statements represent their personality or general tendencies on a scale from 1 = Never or rarely true 2 = Rarely true 3 = Sometimes true 4 = Often true 5 = Very often or always true. All statements are slightly adjusted to fit the context of foreign language (or English in this study) anxiety, for examples: 'I can always manage to solve difficult problems if I try hard enough' was adapted to 'I can always manage to solve my English problems if I try hard enough'; 'I can remain calm when facing difficulties because I can rely on my coping ability' was adjusted to 'I can remain calm when facing difficulties in an English conversation because I can rely on my coping abilities'; and, 'I can usually handle whatever comes my way' was adjusted to 'In an English conversation I can usually handle whatever comes my way'.

Part 6: Foreign language fluency. The 10 items on the instrument, part 6, to measure foreign language fluency were adopted from Babaii, et.al. (2015)'s Formative Self-Assessment tool to assess a person's own speaking performance in 10 aspects, including:

fluency, grammar, vocabulary, pronunciation, communicative effectiveness, topic management, confidence, organization, strategy use, and time management.

The coefficient of the scale is reported high for the learners, before their being provided with the criteria, and the teachers was found to be .73 which is significant at $p < .01$ level, and, the correlation coefficient between the teachers' ratings and the learners' self-awarded scores following the scoring criteria points to a strong, positive correlation ($r = .90$), which is also significant at the $p < .01$ level.

Respondents will rate their scoring on each criterion for self-assessment on the scale from 1 = Novice, 2 = Lower intermediate, 3 = Upper intermediate, 4 = Advanced ,5 = Superior.

The structure of the 112-items measurement scale used in this study, were adopted from various standardized scale. A panel of three content validity expert judges evaluated and provided feedback for the item pool.

Instrument Translation Procedure

The initial instrument is constructed in English, therefore, must be translated into Thai. A Thai independent bilingual translator, who is aware of the objective of the questionnaires, will be asked to translate all 112 items from English to Thai. After that, another independent bilingual translator will backward translate the Thai instrument into English.

The forward and backward translation of the measurement will be reviewed and edited by a panel of three experts. The translated instrument will be pre-tested on 30 students and the reflections of their thoughts and understanding about the questionnaires will be used to adjust the questionnaires. Then, the expert judges will evaluate the final questionnaires.

After, the adaptation and translation of the measuring scale, confirmatory factor analysis (CFA) will be conducted to confirm or reject the measurement.

Data Collection Procedure

After the finalizing the tools for data collection, the researcher seek permission from the Dean of the Graduate School of Psychology to collect the data in the targeted universities. Then the researcher send letters to the Deans of Faculty of Science & Art, Burapha University, Chantaburi Campus; Faculty of Pharmacy, Silpakorn University, Sanam Chandra Palace Campus, Nakorn Pathom; and Executive Directors of Bangchak Corporation PCL.; SCG Chemicals Co., Ltd.; and Government Housing Bank to seek permission to collect the data by asking the student and office worker participants to complete an on-line questionnaire at the participants' convenience. For the prompt collection of the data, the researcher ask the subject students who attend their regular class at the university to complete the questionnaires after their classes. The researcher also asks the organizer of in-house trainings or meetings in the company to ask the participants to fill in the on-line questionnaire at the end of the event. The firms' HR directors also help circulate the on-line questionnaires within the organizations to ensure of a large collection.

After the data is collected, the completed questionnaires will be inspected to check for possible errors of commission and omission. Only valid questionnaires will be subjected to statistical analysis.

Testing of the Instrument

There are 4 steps in testing of the psychometric of the scale:

Step 1: Pretesting. The group of 30 students at Kru Kate English School will be asked to complete the Thai questionnaires and reflect their thoughts and understanding about the questionnaires.

Step 2: Exploratory Factor Analysis (EFA). The instrument will be tested on 1,500 participants from Faculty of Science & Art, Burapha University, Chantaburi Campus; Faculty of Pharmacy, Silpakorn University, Sanam Chandra Palace Campus, Nakorn Pathom; Bangchak Corporation PCL.; SCG Chemicals Co., Ltd.; and Government Housing Bank. The data collected will be tested to uncover the underlying structure of a relatively large set of variables and reduce data to a smaller set of summary variables. EFA will identify the structure of the relationship between the variable and the respondent and test the significance of the scale, and to confirm or reject the measurement.

Step 3: Internal Consistency Assessment. Reliability analysis will be conducted to evaluate the internal consistency of the extracted factors. Corrected item-total correlation statistics will be employed to item-analyze the items that loaded on the extracted factors to determine their overall consistency with their respective factor scores, and the reliability of the scale.

Step 4: Construct Validity. Confirmatory factor analysis (CFA) will be conducted to assess the adequacy of the factor structure identified via EFA. CFA will help the researcher to explicitly posit one or more a priori models to be evaluated and compared systematically as to their goodness-of-fit. CFA help determine the convergent and criterion-related validity of the scale.

Data Analysis

The data collected will be tested using exploratory factor analysis (EFA), reliability analysis and confirmatory factor analysis (CFA).

Exploratory factor analysis (EFA) will be conducted to reduce data to a smaller set of summary variables and the explore the underlying factor structure of the relationship between the 8 variables and the respondents.

Reliability analysis will be conducted to assess the internal consistency of the items using Cronbach's alphas. Corrected item-total correlation statistics were employed to analyze the items that load on the extracted factors in order to assess their overall consistency with their respective factor scores.

Confirmatory factor analysis (CFA) to specify the number of factors required in the data and which measured variable is related to which latent variable. CFA is normally used when developing a scale to identify a set of latent constructs underlying a battery of measured variable. CFA helps test the hypothesis to see whether the relationship between the observed variables and their underlying latent constructs exists. CFA allows the researcher to posit explicitly one or more models to be evaluated as well as compared systematically regarding their goodness-of-fit (Fabriggar, et.al., 1999; Suhr, 2006; Worthington, et.al., 2006). Factor loadings and unique variances of the model will be tested for statistical significance by using maximum likelihood fitting procedures. The convergent and criterion-related validity of the scale will be determined by CFA.

Study II (Path Analysis)

Path Analysis

Study II tests the best fit model of the causal relationships between mindfulness and foreign language anxiety, mediated by 4 irrational thoughts in the Thai context, as well as relationships between foreign language anxiety, self-efficacy and foreign language fluency. Structure equation modeling (SEM) is a comprehensive statistical approach using to test hypotheses about relations among observed and latent variable (Hoyle, 1995). SEM is used to achieve the best fit model in order to bring the confirmatory approach into associating with structural theory. It also tests hypothesized patterns of directional and nondirectional relationships among a set of observed (measured) and unobserved (latent) variables (MacCallum & Austin, 2000).

SEM, also known as path analysis, will be conducted to understand patterns of correlations among the regions and explain as much of the regional variation as possible with the model specified. Path analysis help researcher decide to reject, modify or accept the whole model.

Using the SEM framework can be advantageous in the context of mediation analysis. When this research model's latent variables such as fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognitions (PC), and interiority feeling (INF), SEM allows for ease of interpretation and estimation. SEM simplifies testing of mediation hypotheses because it is designed, in part, to test these more complicated mediation models in a single analysis. SEM can be used when extending a mediation process to multiple independent variables, mediators or outcomes (MacKinnon, 2008).

Suhr (2006) suggests steps in path analysis or SEM as follow:

Step 1: After reviewing the relevant theory and research literature to support model specification, a model identification (e.g., diagram, equations) will be determined whether the number of degrees of freedom, df, for model testing is positive.

Step 2: Select measures for the variables represented in the model and collect, prepare and screen the data. Afterward, preliminary descriptive statistical analysis (e.g., scaling, missing data, collinearity issues, outlier detection) will be conducted. Parameters in the model and model fit will be estimated.

Step 3: Test of Deleted Paths to re-specify the model to make it just identified or saturated, and make sure that the specified paths are included in the equation, but not tested.

Step 4: Test of Specified Paths to retain the significant paths from the previous step.

Step 5: Trimmed Model to re-estimate the model.

This study not only aims to test the proposed conceptual model but also to explore the best model fit. Therefore, five steps as suggested by Crockett (2012) will be used to conduct SEM analysis in this study, as the following.

Step 1: Model specification. The latent and observed variables in the proposed conceptual model and the relationships among them will be specified by a measurement and structural model. A path diagram will be constructed to visually represent the hypothesized relationships among variables in the theoretical model.

Step 2: Model identification. The specified model will be tested for its capability to produce actual results that can be estimated in SEM analysis. Models must be identified and able to generate a unique solution and parameter estimates.

Step 3: Model estimation. An iterative procedure (i.e., fitting function) to generate the theoretical covariance matrix P, as well as minimize the differences between the estimated theoretical covariance matrix P and the observed covariance matrix S will be used to estimate the model. Maximum likelihood (ML) and generalized least squares (GLS) are the most commonly used fitting functions.

Step 4: Model testing. The measurement and structural models will be analyzed to determine (a) the global fit of the entire model, and (b) the fit of individual model parameters. Multiple indices of fit (i.e., absolute, comparative, and parsimonious) will be analyzed to determine the degree to which the theoretical model fits the sample data. The X^2 difference test will also be used when working with nested models to compare the plausibility of the theoretical model to viable alternative models.

Step 5: Model modification. The final exploratory step involves using theory trimming or the addition of new parameters to attempt to improve the theoretical model's fit to the data. All newly modified models and the proposed model will be compared to select the best fit model. Then the mediation effects will be investigated to test the hypotheses.

Sample size

In the study II, structural equation modeling (SEM) is employed to analyze the data. Therefore, a parameters estimation method, which requires a large sample size, was used to maximum the likelihood of accurate results (Hair, et.al., 2006; Jackson, 2007). In order to achieve a desired level of statistical power with a given model prior to data collection, the minimum sample size required must be determined (McQuitty, 2004). It is suggested that a ratio of sample size per an estimated parameter should be greater than 10 for demonstrating

sufficient sample size. (Hair, et.al., 2006; Schreiber, et.al., 2006; Jackson, 2007). However, a ratio of 10 observations to 1 estimated parameter was acceptable, and a ratio of 5 observations to 1 estimated parameter was the least acceptable minimum (Hair, et.al., 2006; Schreiber, et.al.).

There are 112 estimated parameters in the instrument of this study, therefore, the sample size of 1,120 observations, and not less than 560, is considered acceptable.

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Study III (Experiment)

Experimental Research Design

In Study III, an experimental research is conducted scientifically to establish cause and effect of foreign language anxiety. True experimental research, commonly implemented in physical sciences, is the most accurate from of experimental research design because it can establish a cause-effect relationship within groups.

For many true experimental designs, pretest-posttest designs are the preferred method to compare participant groups and measure the degree of change occurring as a result of treatments or interventions using repeated measured ANOVA to compare means between and within groups. This method is a useful way to ensure that an experiment has a strong level of internal validity.

However, this researcher wants to monitor the effect of a new mindfulness intervention upon groups of Thai adult learners of English, including the effects of mindful awareness and measuring psychological constructs in this study. The data will be recorded three times - pre-test, post-test 1 and post-test 2. In this experiment using the standard ANOVA procedures is not appropriate because it does not consider dependencies between observations within subjects in the analysis (Winer, et.al, 1991). To deal with such types of the study data, a repeated measure ANOVA one between subjects factor and one within subjects factor was used to analyze the measured data on individual subjects over a period of time (Ellis, 1999).

The experimental subjects were randomly assigned between two groups, experiment 1 group and experiment 2 group. Both groups are pre-tested and post-tested. The experiment

group is administered the treatment. The following Table 3.1 shows the two-group random assignment pretest-posttest design.

Table 3.1: ***The Two-Group Random Assignment Pretest-Posttest Design***

Groups	Day 1	Day 1-8	Day 8	Day 8-15	Day 15
Experiment 1	Pre-test	No intervention	Post-test 1	Intervention	Post-test 2
Experiment 2	Pre-test	Intervention	Post-test 1	Intervention	Post-test 2

The 100 participants are randomly selected on voluntary basis and randomly assigned to one of the two groups, the experiment 1 and experiment 2 groups. The experimental subjects from each 4 participating organizations are equally and randomly assigned to experiment 1 and experiment 2 groups. The measurements are collected at the same time for both groups for three times (pre-test, post-test 1, and post-test 2). The experiments were conducted separately at the premises of the participating organizations.

Mindfulness Intervention and Period of Time

The mindfulness-based intervention used in this study are based on the widely used practices, such as Jon Kabat-Zinn's (1998) mindfulness-based stress reduction (MBSR), Teasdale, et.al.'s (2002) mindfulness-based cognitive therapy (MBCT), Linehan, M.'s (1993) dialectical behavior therapy (DBT) and Shakyavongsvisuddhi's (2017-2018) cognitive transformation therapy (CTT) as well as widely practiced Buddhist therapy and Vipassana meditation courses in Thailand .

According to Srithanya mental hospital's mindfulness therapy program and many well-known *Vipassana* meditation courses in Thailand, which emphasize the continuing daily practice and the awareness of the present moment throughout the day, the period of time varied.

The normal length of time for Vipassana meditation courses in Thailand range from 1 – 90 days: 1-5 days for basic short courses, 7-14 days for regular courses, and 2 weeks – 3 months for advanced long courses. In this study, the experimental period is 15 days or 2 weeks according to the normal practice of Buddhist Vipassana meditation courses in Thailand. See Table 3.2 for mindfulness therapy and meditation practice in Thailand.

Table 3.2: ***Time comparison of mindfulness therapy and meditation practice in Thailand***

Institutions and websites	Length of time	Practices
The Young Buddhists Association of Thailand under Royal Patronage (YBAT)	1, 3, 5, 7 days	Walking meditation, breathing meditation
Mahachulalongkornrajavidyalaya University (Buddhist university) https://www.mcu.ac.th/	3, 5, 7, days	Walking meditation, breathing meditation, Vipassana* meditation
Mahamakut Buddhist University https://www.mbu.ac.th/	15 days	Walking meditation, breathing meditation, Vipassana meditation
Foundation for the Promotion of Vipassana Mediation under the patronage of His Holiness the Supreme Patriarch of Thailand https://www.thaidhamma.net/	10, 20, 30, 45, 60 days	Breathing meditation, Vipassana meditation and silent daily routine

Srithaya mental hospital http://www.srithanya.go.th/	3-6 months	Moving meditation, breathing meditation, Vipassana meditation

* Vipassana is a way of self-transformation through self-observation.

The mindfulness intervention in this study was carefully designed to improve mindfulness scores in the experimental subjects within a Thai context and a limit time frame. On Day 1 of the experiment, both the experimental groups completed the first measurement (pre-test). Every subject gave a 2-minutes impromptu speech in English before answering the questions on the measurement scale. Each subject was given a topic which s/he must give an immediate speech in English for 2 minutes with no prior preparation in order to generate foreign language anxiety on the participant.

After that, during the no intervention period, the experiment 1 group received a 90-minute general lecture on 'Foreign Language Development' by this researcher on Day 1 as a placebo to control the attitudinal threat. The lecture included the five stages of second language acquisition: preproduction, early production, speech emergence, intermediate fluency, and advanced fluency (Krashen, 1982). The lecture was not aimed to effect foreign language fluency of participants in experiment 1 group but to provide basic knowledge on second language acquisition. After the lecture, the experiment 1 group did nothing else prior to the collection of the second measurement (post-test 1) on Day 8.

The experiment 2 group received a 90-minute mindfulness workshop by this researcher on Day 1. The workshop helped the experimental subjects pay attention to their breathing and learn to observe their unusual physical sensations like muscle tension, heart pounding, hands cold or trembling and perspiration, etc., as well as any negative thoughts that comes to mind. After they were aware of the physical and mental sensations that crop up, they

must pull their attention back to their breath and breathe normally and observed the sensations non-judgmentally until the unusual sensations disappear or back to normal state of the mind. This practice would help the participants develop the internal peace within themselves by letting go of the anxiety or disturbing and irrational thoughts and returning to the balance or neutral state of the mind.

After the workshop, the experiment 1 subjects must practice a 30 minutes daily mindful activities including 10 minutes sitting meditation (*Anapana* breathing meditation), 10 minutes awareness of body sensations (*Vipassana* meditation), 10 minutes awareness of their own thoughts, and awareness of the present moment in everyday life activities, as well as keeping a diary (Day 1-15) to see whether they had completed the daily mindful activities.

On Day 8, both groups had done the second measurement (post-test) including a 2-minutes impromptu in English and the questionnaires. After that, the experiment 2 group received the same mindfulness intervention the same as the experiment 1 group. Both groups must do a 30-minutes daily meditation and keep the diary (Day 8-15) until the third measurement (post-test 2) with the 2-minutes impromptu speech and the questionnaires on Day 15. The experimental model is shown in Figure 3.1.

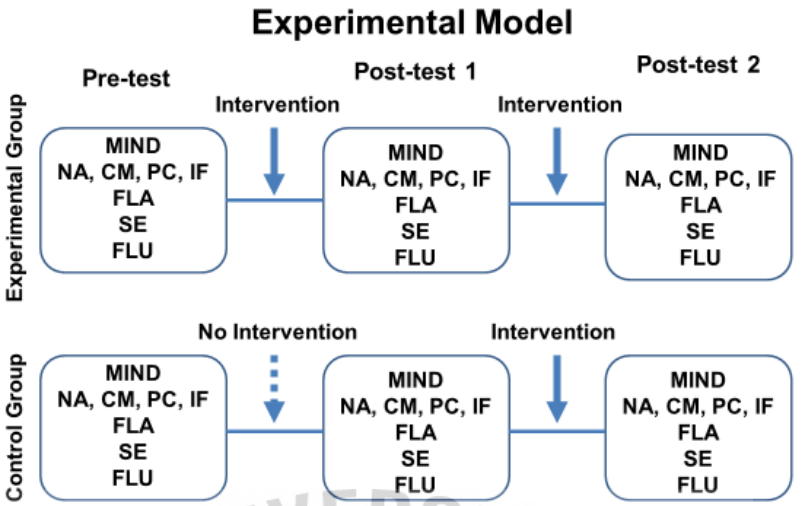

Figure 3.1: ***The experimental model***

Participants

It is recommended a sample size of 40 patients per group, or a total of 80 patients for studies with repeated measures for it would give a power of at least 0.8 for testing the hypothesis of whether there is a time × intervention interaction (Guo, et.al., 2013).

Therefore, the participants for the experimental randomized pretest-posttest two group control group design consist of 100 research subjects including; 10 students from Kru Kate English School, 30 students from Silpakorn University, 30 staff of the Office of Natural Resources and Environmental Policy and Planning, and 30 staff from Bangchak Corporation PCL.

Data Collection Procedure

After the trimmed model was finalized for data collection, the researcher has sought permission from the Dean of the Graduate School of Psychology to collect the data in the targeted universities and offices. Letters of request were sent to the dean of Faculty of

Pharmacy, Silpakorn University, Sanam Chandra Palace Campus, Nakorn Pathom; and executive directors of the Office of Natural Resources and Environmental Policy and Planning, Bangchak Corporation PCL. and Kru Kate English School, to seek permission to conduct the experimental research and collect the data by asking the student/ worker participants to attend the experiments and complete the on-line questionnaires before, during and after the experiments.

The participants were randomly assigned to experiment 1 and experiment 2 groups. Data was collected from the experimental research subjects of both control and treatment groups at the same time right after giving a one-minute impromptu speech on day 1 (pre-test, before the experiment), day 8 (post-test 1, during the experiment), and day 15 (post-test 2, end of experiment), using the same measurement. Each subject was randomly assigned the topic for a 2-minute impromptu speech in front of the audience with no time for preparation to stimulate foreign language anxiety.

After the data was collected, the completed questionnaires were inspected to check for possible errors of commission and omission. Only valid questionnaires of the research subjects, who fully participate throughout the experimental period of 15 days, would be subjected to statistical analysis.

Instrumentation

The same set of inventories used in study I and II were used to collect data from the participants. The inventories were administered to the participants in small groups after a brief introduction on the state of foreign language fluency among Thai nationals and the importance of improving it. The actual purpose of the study was not revealed to the participants to limit biases, but the participants were informed that the study aimed to identify English communication

problems for Thais. The inventories were administered to all participants at three time periods. First administration was done before employing mindfulness intervention (pre-test), and the second administration was done after one week's time (post-test 1), and the third administration as a follow-up was done after further one week's time (post-test 2).

Data Analysis

The statistical methods traditionally used in comparing groups with pre-test and post-test data are; (1) analysis of variance (ANOVA) on the gain scores, (2) analysis of covariance (ANCOVA), (3) ANOVA on residual scores, and (4) Repeated measures ANOVA. The use of pretest scores in all these methods helps reduce error variance and produce more powerful tests than designs with no pretest data. The power of the test represents the probability of detecting differences between the groups being compared when such differences exist (Stevens, S., 1996; Becker, L.A., 1999).

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CHAPTER IV

RESULTS

Overview of the Chapter

As mentioned in the previous chapter, the primary purpose of this study is to build a model for describing and predicting the variables responsible for foreign language fluency among Thai nationals. Specifically, the study aims to investigate the influence of mindfulness in improving foreign language fluency, and the role of variables such as irrational thoughts, foreign language anxiety, and self-efficacy in this relationship.

The results of the investigation are divided into 3 parts or studies.

Study 1 aimed to investigate the psychometric properties of the instruments that are used to measure the main variables of the study namely, mindfulness, irrational thoughts (fear of non-achievement, perfectionistic cognitions, concern for mistakes, inferiority feelings), foreign language anxiety, self-efficacy and foreign language fluency. The specific questionnaires are used to measure these variables and description of each are presented in the previous chapter.

Study II reported the structural equation model (SEM) exploring the relationship among the variables. The approach used in SEM is both hypothesis testing and model building. First, the hypothetical framework proposed by the investigator was tested for model fit; and second alternative nested models were conceived – by altering the hypothetical model, by adding a deleting path one at a time – and tested.

Study III reported the results of intervention used to improve foreign language fluency. Pre-post, experimental and control design was adapted. A 2x3 repeated measures ANOVA for repeated measures in the second variable was used.

Study I (Psychometric Properties of the Scale)

Overview results of the study I

The purpose of Study I is to understand the psychometric properties of the questionnaires, and to create item parcels for SEM analysis. As a first step, questionnaires were translated into Thai language, and after ascertaining validity of translation, the Thai version of the questionnaires were administered to a sample of 524 Thai nationals. Basic psychometric properties such as means, variance, skewness and kurtosis, intercorrelation were examined. Exploratory factor analysis was performed on each questionnaire to identify factor structure and to create item parcels for Confirmatory factor analysis and structural analysis.

Testing the Psychometric Properties of the Scale

The scale used in this study was adopted from the standardized scales which were chosen based on the literature review to fit the context of this study. The questionnaire translation, the pre-test and the testing of psychometric of the scale were conducted in order to test the validity and reliability of the scale using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA).

Questionnaire Translation

In employing measurement scales developed overseas for research in a host country, it is necessary that these scales be appropriately translated into the host country's language in order to have both contextual and conceptual equivalence. The method of choice was the 'forward and backward' translation technique as recommended by a number of researchers (e.g., McDermott & Palchanes, 1992; John, et.al.,2001, 2006).

Following steps were adapted for translating the questionnaires: (a) the instruments were translated into Thai by a bilingual translator; (b) a second bilingual translator independently back- translated the instruments to their original English version from Thai; (c) the two versions (the original English and the English back-translated instruments) were compared by the researcher; and (d) a meeting between the researcher and the translators was held to resolve any disparities identified between the original and the back-translated English versions. For disputed items, possible alternatives Thai versions were discussed and incorporated in order to ensure conceptual equivalence of the English and Thai versions. The process ended when the panel of translators (Appendix A) agreed that both the forward- and back-translated versions were the same in meaning and context.

Pre-test

The pretest of the Thai version questionnaires was conducted prior to the actual study to check for errors and readability. The data were collected from a total of 30 students at Kru Kate Language School to see if there is confusion about any items. The pre-test results revealed no errors and comprehension problems.

Data Collection Procedure and Participants

After the measurement scale has been pre-tested and slightly adjusted according to the suggestions of some participants, the questionnaires were distributed online using the convenience sampling technique in a period of one month. The researcher has received kind cooperation from Faculty of Science & Art, Burapha University, Chantaburi Campus; Faculty of Pharmacy, Silpakorn University, Sanam Chandra Palace Campus, Nakorn Pathom; Bangchak Corporation PCL.; SCG Chemicals Co., Ltd.; and Government Housing Bank, in

distributing QR code for the online questionnaires among their students, staff members and social network within the period of data collection.

The youngest age to participate in the experiment is 18. The first age group is 18-23 which is the age range for undergraduate student. The next age ranges are multiples of ten years. The last age range is 56 and above.

A total of 1,358 data were collected and encoded for statistical analysis and interpretation. The respondents were male (n=382, 28.13%) and female (n=976, 71.87%), aged ranges 18-23 years old (n=528, 38.88%), 24-35 years old (n=172, 12.67%), 36-45 years old (n=210, 15.46%), 46-55 years old (n=255, 18.78%), 55 years old and above (n=193, 14.21%).

The participants were students (n=533, 39.25%), employees (n=504, 37.11%), business owners (n=105, 7.73%), self-employed (n=147, 10.82%). Their first language was Thai (n=1,355, 99.87%), and their foreign languages were English (n=1248, 91.90%) and Chinese (n=44, 3.24%) and others (n=66, 4.86%). The religious dominances were Buddhism (n=1,243, 91.53%), Christianity (n=38, 2.80%) and Islam (n=37, 2.72%).

The participants' meditation practices varied from never (n=387, 28.50%) to a few times a year (n=556, 40.94%), a few times a month (n=214, 15.76%), a few times a week (n=126, 9.28%) and every day (n=75, 5.52%).

The biographical data of the respondents are shown in Table 4.1.

Table 4.1.1: ***Biographical Data of Respondents***

			Total sample		CFA sample		SEM sample	
	Total Respondents		1358	100%	524	100%	834	100%
1	Sex	Male	382	28.13	151	28.82	231	27.70
		Female	976	71.87	373	71.18	603	72.30
2	Age	18-23	528	38.88	199	37.98	329	39.45

		24-35	172	12.67	61	11.64	111	13.31
		36-45	210	15.46	88	16.79	122	14.63
		46-55	255	18.78	91	17.37	164	19.66
		56 and above	193	14.21	85	16.22	108	12.95
3	Occupation	Students	533	39.25	199	37.98	334	40.05
		Employees	504	37.11	206	39.31	298	35.73
		Business Owners	105	7.73	31	5.92	74	8.87
		Self-employed	147	10.82	59	11.26	88	10.55
		Unemployed	69	5.08	29	5.53	40	4.80
4	Marital Status	Single	900	66.27	337	64.31	563	67.51
		Married	401	29.53	167	31.87	234	28.06
		Divorced/Separated	38	2.80	13	2.48	25	3.00
		Widowed	19	1.40	7	1.34	12	1.44
5	Birth Rank In family	Only child	187	13.77	69	13.17	118	14.15
		Eldest Child	453	33.36	169	32.25	284	34.05
		Middle Child	279	20.54	111	21.18	168	20.14
		Youngest Child	438	32.25	175	33.40	263	31.53
		Adopted Child	1	0.07	0	0.00	1	0.12
6	Educational level	High School Diploma	90	6.63	25	4.77	65	7.79
		Vocational Certificate	47	3.46	14	2.67	33	3.96
		Bachelor's Degree	800	58.91	310	59.16	490	58.75
		Master's Degree	360	26.51	149	28.44	211	25.30
		Doctorate Degree	61	4.49	26	4.96	35	4.20
7	Monthly income	Less than 20,000 Baht	638	46.98	238	45.42	400	47.96
		20,001- 35,000 Baht	189	13.92	69	13.17	120	14.39

		35,001– 50,000 Baht	187	13.77	78	14.89	109	13.07
		50,001 Baht and above	344	25.33	139	26.53	205	24.58
8	First	Thai	1355	99.78	523	99.81	832	99.76
	language	Chinese	1	0.07	1	0.19	0	0.00
		Others	2	0.15	0	0.00	2	0.24
9	Foreign	English	1248	91.90	483	92.18	765	91.73
	language	Chinese	44	3.24	17	3.24	27	3.24
		Others	66	4.86	24	4.58	42	5.04
10	Religion	Buddhism	1243	91.53	486	92.75	757	90.77
		Christianity	38	2.80	14	2.67	24	2.88
		Islam	37	2.72	11	2.10	26	3.12
		Hindu	2	0.15	1	0.19	1	0.12
		Others	1	0.07	0	0.00	1	0.12
		None	35	2.58	12	2.29	23	2.76
11	Meditation	Never	387	28.50	145	27.67	242	29.02
	Practices	A few times a year	556	40.94	215	41.03	341	40.89
		A few times a month	214	15.76	88	16.79	126	15.11
		A few times a week	126	9.28	55	10.50	71	8.51
		Everyday	75	5.52	21	4.01	54	6.47

Abbreviations and Definitions of Constructed Variables

This study investigates the relationship among the variables in the proposed conceptual model. There is one exogenous variable (mindfulness - MIND), 4 mediator variables (fear of non-achievement - FNA, concern over mistakes - CM, perfectionistic cognitions - PC, and, interiority feeling - IF), and 3 endogenous variables (foreign language

anxiety – FLA, self-efficacy – SE, and, foreign language fluency – FLU. Abbreviations and definitions of all constructed variables are shown in Table 4.1.2.

Table 4.1.2 ***Abbreviations and Definitions of Constructed Variables***

Constructs	Abbreviations	Observed variables	Definitions
Exogenous variable			
Mindfulness	MIND	MIND_PF1, MIND_PF2, MIND_PF3, MIND_PF4	a person's awareness of physical and mental sensations
Mediator variables			
Irrational thought	IRF	FNA, CM, PC, IRF	patterns of thinking that cause psychological damage
Second order variables			
Fear of non-achievement	FNA	FNA_P1, FNA_P2, FNA_P3	cognitive reaction to negative consequences of failing to achieve a goal
Concern over mistake	CM	CM_P1, CM_P2, CM_P3, CM_P4	cognitive reaction to negative consequences of making mistake
Perfectionistic cognition	PC	PC_P1, PC_P2, PC_P3	a person's preoccupation with self-evaluation and doubts, criticizes and

			un-appreciation of his own performance
Inferiority feeling	INF	INF_P1, INF_P2, INF_P3	a person's feeling of incompetence due to his constant comparison to others and negative interpretations
Endogenous variables			
Foreign language anxiety	FLA	FLA_P1, FLA_P2, FLA_3, FLA_P4	a feeling of unease, worry, nervousness and apprehension experienced when using a foreign language
Self-efficacy	SE	SE_P1, SE_P2, SE_P3	a person's optimistic self-belief in his own competency
Foreign language fluency	FLU	FLU_P1, FLU_P2, FLU_P3	a person's ability to express thoughts in English at length without hesitation

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Samples for CFA

The total sample of 1,358 respondents, a random sample of 524 (40%) sample were tested for normal distribution by examining the skewness and kurtosis of all observed variables in the model and this sample will be used for CFA. The sample participants were male: n=151, 28.82%; female: n=373, 71.18%). The participants were students (n=199, 37.98%), employees (n=206, 39.31%), business owners (n=31, 5.92%), self-employed (n=59, 11.26%), and unemployed (n=29, 5.53%).

The age of the 524 participants fell into five ranges,18-23 years old (n=199, 37.98%), 24-35 years old (n=61, 11.64%), 36-45 years old (n=88, 16.79%), 46-55 years old (n=91, 17.37%), 55 years old and above (n=85, 16.22%).

All participants of both groups speak Thai as their native language (n=523, 99.18%) and speak English and Chinese as their foreign language (n=482, 92.18%; n=17, 3.24%) respectively.

The religious dominances were Buddhism (n=486, 92.75%), Christianity (n=14, 2.67%) and Islam (n=11, 2.10%).

The participants' meditation practices varied from never (n=145, 27.67%) to a few times a year (n=215, 41.03%), a few times a month (n=88, 16.79%), a few times a week (n=55, 10.50%) and every day (n=21, 4.01%).

The summary of biographical data of the samples used in CFA are shown in Table 4.1.1.

Normality Test of the Data

The random sample comprises of 1,358 respondents, from which a random sample of 524 (40%) were tested for normal distribution by examining the skewness and kurtosis of all observed variables in the model and this sample will be used for CFA. Skewness is a measure of the asymmetry of the probability distribution around the mean of that variable, and kurtosis is a measure of relative peakness or flatness of distribution compared with normal distribution. As the rule of thumb, if skewness and kurtosis is between -1 and +1, the sample represents the whole normal population. From Table 4.1.3, none of skewness and kurtosis fell outside the critical value, therefore, all observed variables in this study are assumed to be normally distributed.

Table 4.1.3: ***Descriptive Statistics: Means and standard deviations of indicator variables***

Variables	No of item	Mean	S.D.	Skewness	Kurtosis	Min.	Max.	Cronbach's reliability
Mindfulness (MIND)	24	74.120	8.571	0.305	0.573	47.000	108.000	0.818
Fear of non-achievement (FNA)	8	25.656	7.986	-0.171	-0.698	8.000	40.000	0.926
Concern for mistakes (CM)	16	37.433	15.229	0.677	-0.190	16.000	80.000	0.959
Perfectionist concern (PC)	9	28.004	7.760	-0.122	-0.360	9.000	45.000	0.887
Inferiority feelings (INF)	7	13.968	7.072	0.991	0.389	7.000	35.000	0.941

Foreign language anxiety (FLA)	28	83.073	21.104	0.156	-0.399	28.000	140.000	0.936
Self-efficacy (SE)	10	35.429	8.418	-0.368	0.019	10.000	50.000	0.952
Foreign language fluency (FLU)	10	29.019	9.696	-0.226	-0.230	10.000	50.000	0.961

N=524

Correlations of all Construct Variables

The correlation coefficients, as shown in Table 4.1.4, show the strength and direction of a linear relationship between the constructs. The value can range from -1 to +1. The greater the absolute value of the correlation coefficient, the stronger the relationship. The values are in-between 0 and +1/-1, which indicates that there are relationship between the variables (Hair, et.al., 2006). Positive coefficients indicate that when the value of one variable increases, the value of the other variable also tends to increase. Negative coefficients represent cases when the value of one variable increases, the value of the other variable tends to decrease. The correlation coefficients indicate moderate positive relationship between the two variables, except, FNA, CM, PC, INF, and FLA which has moderate negative relationship with SE and FLU, at 0.01 significant level.

Table 4.1.4: ***Correlation Matrix of the Constructs***

Variables	Correlation Coefficients							
	MIND	**FNA**	**CM**	**PC**	**INF**	**FLA**	**SE**	**FLU**
Mindfulness (MIND)	1.000	0.042	0.054	0.175**	0.045	0.069	0.261**	0.217**
Fear of non-achievement (FNA)		1.000	0.646**	0.586**	0.466**	0.736**	-0.430**	-0.393**
Concern for mistakes (CM)			1.000	0.660**	0.731**	0.722**	-0.338**	-0.191**
Perfectionist concern (PC)				1.000	0.548**	0.664**	-0.204**	-0.127**
Inferiority feelings (INF)					1.000	0.648**	-0.266**	-0.145**
Foreign language anxiety (FLA)						1.000	-0.387**	-0.387**
Self-efficacy (SE)							1.000	0.636**
Foreign language fluency (FLU)								1.000

**. Correlation is significant at the 0.01 level (2-tailed).

Reliability Analysis

Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It measures of reliability of the scale. A reliability coefficient of .70 or higher is considered acceptable in most social science research situations (Hair, et.al., 2006). To estimate reliability of all 8 constructs, Cronbach's alpha is tested. From Table 4.1.3, the alpha coefficient for the eight constructs are above .80 (6 of them are above .90 and 2 of them are above .80), suggesting that all items have relatively high internal consistency of a set of constructs in the model, thus, are highly reliable.

Exploratory Factor Analysis (EFA)

Exploratory factor analysis was conducted to identify the factor structure of the aforementioned Thai-translated scales. EFA is conducted to determine underlying factors for a set of measured variables before conducting a confirmatory factor analysis (CFA) to test the hypothesis that a relationship between the observed variables and their underlying latent factors exists (Suhr, 2006). The purpose of conducting EFA is to determine the factor structure and it also helps in determining the item parcels for CFA.

In order to indicate the strength and direction of a factor on a measured variable, factor loadings are used to see which items load highly on which factors and what those items have in common. Factor loading can be classified based on their magnitude. If it is greater than +.50, it is practically significant, and +.30 is the minimum consideration level. The results in the component matrix of each latent variables revealed that all factor loadings or component loadings were higher than .50 which means all items in each component correlate or load very meaningfully high on the component.

Mindfulness (MIND)

Exploratory factor analysis was done on 24 item mindfulness scale. The first varimax rotation revealed 6 components to represent the latent variable – mindfulness, with 58.889% of variance explained the factor analysis (Table 4.1.5). However, noticeably, the original FFMQ has only 5 components including, Observing, Describing, Acing with awareness, Non-judging of inner experience, and Non-reactivity. The results (in Appendix F) also had shown low factor loadings for item number 11 (0.515 – lowest in component 1) and item number 5 (poor factor loadings, 0.437 in component 1, -0.463 in component 4 and 0.472 in component 6, which means they unreliably represent 3 different dimensions of mindfulness at the same time).

Therefore, the second varimax rotation was done by removing item numbers 5 and 11; and the new result reveal 5 components, according to the original FFMQ scale, with 56.579% of variance explained the factor analysis (Table 4.1.5).

The communality (h^2) are estimates of the variance in each variable accounted for by all components or factors. It is the sum of the squared factor loading or the correlations between each variable and each factor. The value of h^2 in rotated component matrix (Appendix F) are all above .4, by which a rule of thumb, variables with a rotated factor loading of at least .4 onto one of the factors are considered meaningful (Vogt, 1999).

Table 4.1.6 shows the comparison of the items representing the 5 components of the FFMQ and the measurement scale of this study, after the second rotation. It is revealed that all items represented the same 5 components of the FFMQ, except item numbers 3 and 21 in ‘Describing’ component. The 22 items on the measurement scale is considered reliable to represent mindfulness. The component 1 represents ‘Acting with awareness’, component 2 represents ‘Non-reactivity to inner experience’, component 3 represents ‘Observing’,

component 4 represents ‘Describing’, component 5 represents ‘Non-judging of inner experience’ dimensions of mindfulness.

Table 4.1.5: ***Exploratory factor analysis of all construct variables***

Variables	No. item	%Var. exp.	No. of comp.	No. parcel	Reli-ability	Std. Scale	No. of comp.	Reli-ability	Constructs
MIND	22	56.579	5	4	0.818	FFMQ-SF	5	0.80	Acting with awareness, non-reactivity to inner experience, Observing, Describing, Non-judging of inner experience
FNA	8	62.906	1	3	0.926	PI	1	0.91	Need for approval
CM	16	66.786	2	4	0.959	PI, FMPS	1 1	.91, .90	Self-view of mistake, others’ view of mistake
PC	9	67.520	2	3	0.887	FMPS	2	.90	Other’s expectation, Doubt about action
INF	7	76.662	1	3	0.941	PLD	1	.94	Perceived language Discrimination
FLA	28	60.489	2	4	0.936	FLCAS-SF	1	.93	General English performance anxiety, low-self-confidence in speaking English
SE	10	69.558	1	3	0.952	GSE	1	.952	Self-efficacy
FLU	10	76.168	1	3	0.961	SASA	1	.90	Speaking ability

Table 4.1.6: ***The comparison of the items representing the 5 components of the FFMQ and the measurement scale in this study.***

Components represent mindfulness	Item numbers in FFMQ	Item numbers in the measurement scale used in this study (second rotation)
1 - Acting with awareness	8, 12, 17, 22, 23	8, 12, 17, 22, 23
2 - Non-reactivity to inner experience	3, 9, 13, 18, 21	9, 13, 18, 21
3 - Observing	6, 10, 15, 20	6, 10, 15, 20
4 - Describing	1, 2, 5, 11, 16	1, 3, 16, 21
5 - Non-judging of inner experience	4, 7, 14, 19, 24	4, 7, 14, 19, 24

The 22 items represent the latent construct 'mindfulness' (MIND) were parceled into 4 parcels, based on 3 loadings, the high, moderate, and low loadings. Item parcels were made in such a way that items representing each factor were included in each parcel, which is a shorten version of the whole scale

Following are the details of item parcels

Parcel 1 (MIND_PF1): 1, 22, 10, 21, 24, 4

Parcel 2 (MIND_PF2): 2,23,6,18,19,14

Parcel3 (MIND_PF3): 3, 12, 15, 9, 7

Parcel 4 (MIND_PF4): 16, 17, 20, 13

An adequately reliable measure should have a reliability index of at least 0.7 (Frantom & Green, 2002). Reliability of scale with item parcels for mindfulness is 0.818 which is considered high (Table 4.1.7).

Table 4.1.7: ***Reliability of scale with item parcels of all latent constructs***

Latent constructs	No of parcels	Reliability of scale with item parcels	%variance explained Rotation Varimax	Factors	α	No of item
Mindfulness (MIND)	4	0.818	56.579	All items	0.734	22
				Factor 1	0.611	5
				Factor 2	0.790	5
				Factor 3	0.720	4
				Factor 4	0.674	5
Fear of non-achievement (FNA)	3	0.926	62.906	All items	0.915	8
Concern for mistake (CM)	4	0.959	66.786	All items	0.953	15
				Factor 1	0.942	11
				Factor 2	0.901	5
Perfectionistic cognition (PC)	3	0.887	67.520	All items	0.870	9
				Factor 1	0.856	5
				Factor 2	0.857	4
Inferiority feeling (INF)	3	0.941	76.662	All items	0.947	7
Foreign language anxiety (FLA)	4	0.936	60.489	All items	0.934	28
				Factor 1	0.971	22

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				Factor 2	0.765	6
Self-efficacy (SE)	3	0.952	69.558	All items	0.951	10
Foreign language fluency (FLU)	3	0.961	76.168	All items	0.965	10

Fear of non-achievement (FNA)

There are 8 items (items no. 1-8, in part 3 on the measurement scale) which represent fear of non-achievement (FNA). The scale was adapted from one of the factors – need for approval - under Perfectionism Inventory (PI - Hill, et.al., 2008). From Table 4.1.5, the varimax rotation revealed 1 component to represent the latent variable - fear of non-achievement (FNA) - with 62.906 % of variance explained the factor analysis, meaning the component seems to explain 62.91% of the variation in the data. The value of $h^{2,}$ in rotated component matrix (Appendix F) are all above .4, therefore, variables are considered meaningful (Vogt, 1999).

Next, the item parcelling was done to improve the model fit to the data and revealed that the factor was unidimensional. The 8 items represent the latent construct 'fear of non-achievement' (FNA) were loaded in one factor, item parcels were made randomly, as follows:

Parcel 1- FNA_P1: 1, 4, 7

Parcel 2 - FNA_P2: 2, 5, 8

Parcel 3 - FNA_P3: 3, 6

Reliability of scale with item parcels for fear of non-achievement (FNA) is 0.926 which is considered exceedingly high (Table 4.1.7), therefore, the unidimensional factor can best define the latent variable, fear of non-achievement (FNA).

Concern over mistakes (CM)

There are 16 items (items no. 9-24, in part 3) on the measurement scale which represent concern over mistakes (CM). The scale was adapted from one of the factors – concern over mistakes - under 2 standardized scales; Perfectionism Inventory (PI - Hill, et.al., 2008) and Frost Multidimensional Perfectionism Scale (FMPS - Frost, et.al., 1990). From Table 4.1.5, the factor loading using varimax rotation revealed 2 components to represent the latent variable – concern over mistakes (CM), with 66.786% of variance explained the factor analysis, meaning the component can explain 66.79% of the variation in the data. Almost all value of h^2 in rotated component matrix (Appendix F) are above .7, therefore, variables are considered important (Vogt, 1999).

The 2 components derived from factor loading represented the different views of concern over mistakes according the two different scales, PI and FMPS, from which they were adopted. The 2 components revealed a two factors solution for concern over mistakes in this study, which can be labeled as 'self-view on mistakes' (items no.9-13, adopted from PI) and 'others' view on his/her mistakes' (items no.14-16, adopted from PI, and items no.17-24, adopted from FMPS). The reliability of both factors (Table 4.1.7; all items = 0.953, factor 1= 0.942, factor 2 = 0.901) were considerably extremely high.

The item parcelling was done to improve the model fit to the data. Though the parcelling 2 components were revealed, all items showed cross loadings in both factors. Therefore, item parcels were made randomly. Following are the details of item parcels:

Parcel1 - CM_P1: 9, 13, 17, 21

Parcel2 - CM_P2: 10, 14, 18, 22

Parcel3 - CM_P3: 11, 15, 19, 23

Parcel4 - CM_P4: 12, 16, 20, 24

Reliability of scale with item parcels for concern over mistakes (CM) is 0.959 which is considered extremely high (Table 4.1.7), therefore, the two multidimensional factors can best define the latent variable, concern over mistakes (CM)**.**

Perfectionistic cognition (PC)

There are 9 items (items no. 25-33, in part 3) on the measurement scale which represent Perfectionistic cognition (PC)**.** The scale was adapted from 2 factors under the standardized scales, Frost Multidimensional Perfectionism Scale (Frost, et.al., 1990). Item number 25-29 represent 'others' expectation' and item numbers 30-33 represent 'doubt about actions'. From Table 4.1.5, the factor loading using varimax rotation revealed 2 components to represent the latent variable – perfectionistic cognition (PC), with 67.520% of variance explained the factor analysis, meaning the component can explain 67.52% of the variation in the data. Almost all value of h^2 in rotated component matrix (Appendix F) are above .7, therefore, variables are considered important (Vogt, 1999).

Since the items are loaded in two factors, item parcels were made to contain items from both factors such that each parcel is a shorter version of the whole scale Following are the details of item parcels:

Parcel 1 - PC_P1: 25, 28, 31

Parcel 2 - PC_P2: 26, 29, 32

Parcel 3 - PC_P3: 27, 30, 33

Reliability of scale with item parcels: 0.887

Reliability of scale with item parcels for perfectionistic cognition (PC) is 0.887 which is considered remarkably high (Table 4.1.7), therefore, the two multi-dimensional factors can best define the latent variable, perfectionistic cognition (PC)**.**

Inferiority feeling (INF)

There are 7 items (items no. 34-40, in part 3 on the measurement scale) which represent inferiority feeling (INF). The scale was adapted from the 7 items, unidimensional, Perceived Language Discrimination Scale (PLDS, Wei, etl.al., 2012). From Table 4.1.5, the varimax rotation revealed 1 component to represent the latent variable - inferiority feeling (IF) - with 76.662 % of variance explained the factor analysis, meaning the component can explain 76.66% of the variation in the data. The value of $h^{2,}$ in rotated component matrix (Appendix F) are all above .7, therefore, variables are considered important (Vogt, 1999).

The item parcelling revealed that the factor was unidimensional. The 7 items represent the latent construct 'inferiority feeling (INF) were loaded in one factor, item parcels were made randomly, as follows:

Parcel 1 - INF_P1: 34, 37, 40

Parcel 2 - INF_P2: 35, 38

Parcel 3 - INF_P3: 36, 39

Reliability of scale with item parcels for inferiority feeling (INF) is 0.941 which is considered extremely high (Table 4.1.7), therefore, the unidimensional factor can best define the latent variable, inferiority feeling (IF).

Foreign language anxiety (FLA)

There are 28 items (items no. 1-28, in part 4 on the measurement scale) which represent foreign language anxiety (FLA). The scale was adapted from the short form 28 items, Foreign Language Classroom Anxiety Scale (FLCAS, Panayedes & Walker, 2013). From Table 4.1.5, the varimax rotation revealed 2 components to represent the latent variable – foreign language anxiety (FLA) - with 60.489 % of variance explained the factor analysis, meaning the component can explain 60.49% of the variation in the data. The value of $h^{2,}$ in

rotated component matrix (Appendix F) are all above .4, therefore, variables are considered meaningful (Vogt, 1999).

However, recent research had questioned whether FLCAS is a unidimensional or multi-dimensional scale. Horwitz, et.al. (1986), the developer of the 33 items full scale and Panayedes & Walker (2013), the developer of the 28 items shorter version of the scale, stated that FLCAS is a unidimensional scale. Cheng, et.al. (1999) and Matsuda & Gobel (2004) extracted two factors from the scale and labeled the first factor 'general English performance anxiety' and the second 'low self-confidence in speaking English'. The factor loading results from this study, using the 28 items shorter version of the scale, also revealed 2 components which can also be labeled as 'general English performance anxiety' (all items except no. 5, 8, 11, 14, 23, 27) and 'low self-confidence in speaking English' (items no. 5, 8, 11, 14, 23, 27). The reliability of both factors (Table 4.1.7; all items = 0.934, factor 1= 0.971, factor 2 = 0.765) were considerably extremely high. Therefore, the EFA results supported a two-dimensional constructs of FLCAS in this study.

Since the items are loaded in two factors, item parcels were made to contain items from both factors such that each parcel is a shorter version of the whole scale

Following are the details of item parcels

Parcel 1 - FLA_P1: 1, 5, 9, 13, 17, 21, 25

Parcel 2 - FLA_P2: 2, 6, 10, 14, 18, 22, 26

Parcel 3 - FLA_P3: 3, 7, 11, 15, 19, 23, 27

Parcel 4 - FLA_P4: 4, 8, 12, 16, 20, 24, 28

Reliability of scale with item parcels for foreign language anxiety (FLA) is 0.936 which is considered remarkably high (Table 4.1.7), therefore, the multi-dimensional factors can best define foreign language anxiety (FLA).

Self-efficacy (SE)

There are 10 items (items no. 1-10, in part 5 on the measurement scale) which represent self-efficacy (SE). The scale was adapted from the 10 items, unidimensional, General Self-efficacy Scale (GSE, Schwarzer & Jerusalem, 1995). From Table 4.1.5, the varimax rotation revealed 1 component to represent self-efficacy with 69.558 % of variance explained the factor analysis, meaning the component can explain 69.56% of the variation in the data. The value of $h^{2,}$ in rotated component matrix (Appendix F) are all above .6, therefore, variables are considered important (Vogt, 1999).

The item parcelling revealed that the factor was unidimensional. The 10 items represent the latent construct 'self-efficacy' (SE) were loaded in one factor, item parcels were made randomly, as follows:

Parcel 1 - SE_P1: 1, 4, 7, 10

Parcel 2 - SE_P2: 2, 5, 8

Parcel 3 - SE_P3: 3, 6, 9

Reliability of scale with item parcels for self-efficacy (SE) is 0.952 which is considered extremely high (Table 4.1.7), therefore, the unidimensional factor can best define the latent variable, self-efficacy (SE).

Foreign language fluency (FLU)

There are 10 items (items no. 1-10, in part 6 on the measurement scale) which represent foreign language fluency (FLU). The scale was adapted from the 10 items, unidimensional, Speaking Ability Self-Assessment (SASA, Babaii, et.al., 2015). From Table 4.1.5, the varimax rotation revealed 1 component to represent foreign language fluency with 76.168 % of variance explained the factor analysis, meaning the component can explain

76.17% of the variation in the data. The value of $h^{2,}$ in rotated component matrix (Appendix F) are all above .6, therefore, variables are considered important (Vogt, 1999).

The item parcelling revealed that the factor was unidimensional. The 10 items represent the latent construct 'foreign language fluency' (FLU) were loaded in one factor, item parcels were made randomly. Following are the details of item parcels

Parcel 1 - FLU_P1: 1, 4, 7, 10

Parcel 2 - FLU_P2: 2, 5, 8

Parcel 3 - FLU_P3: 3, 6, 9

Reliability of scale with item parcels for foreign language fluency (FLU) is 0.961 which is considered extremely high (Table 4.1.7), therefore, the unidimensional factor can best define the latent variable, foreign language fluency (FLU).

Item Parcels

Item parceling is one of several procedures for combining individual items and using these combined items as the observed variables, typically as the observed variables in Confirmatory Factor Analysis (CFA) or Structural Equation Modelling (SEM). Parceling helps improve the quality of measurement variables and model fit. Parceling also enhances model parsimony, but it greatly reduces falsifiability of the tested model (Wu & Wen, 2011).

The measurement scale in this study were adapted from various standardized scale, which comprised large number of items on the scale. Therefore, the exploratory factor analysis (EFA) of each latent variable was done using extraction method of principle component analysis (PCA) using varimax rotation. PCA was used to describe as much of the variation in the first few axes and then rotate the axes to reduce the dimensions or cover the maximum variation. Then, varimax rotation was done to associate each variable to at most

one factor by maximizing the sum of the variances of the squared loadings as all the coefficients would be either large or near zero, with few intermediate values (Kaiser, 1958).

Based on the Principle of Aggregation, each parcel will have greater reliability than any individual item that is used to create the parcel. As a result of having greater reliability, a given parcel will have a larger proportion of true-score variance to unique variance than any item used to build it (except in rare cases when individual item reliability is extremely low (Bandalos & Finney, 2001). The indicator-level reliability will also make the factor loadings stronger (increased communality) and the residual variances smaller. As a result, the ratio of common-to-unique factor variance is higher. All three of these related features of parcels are beneficial to improving the psychometric properties of the data that are fit in an SEM model (Wu & Wen, 2011).

Since the scale used in this study had too many items, to reduce the estimation problems in assignment of items to factors, the item parceling techniques to combine items as the observed variables were used.

The reliability of scale with item parcels of all latent constructs (Table 4.1.7, page 108) are very high, reliabilities of 5 constructs (FNA, CM, INF, SE, FLU) are above .90 and 3 (MIND, PC, FLA) are above .80, indicating that the measurement scale used in this study is highly consistent.

Table 4.1.7 shows that the Cronbach's alpha of factor components of all latent constructs from principal component and factor analysis are above .7 which are considered to have a good reliability. The higher the alpha value, the lower error variance in a scale, the better the internal consistency (Osborne & Banjanovic, 2016).

Normality of the item parcels of all latent variables

Normality tests are used to determine whether a data set in item parcel is modeled for normal distribution. Statistically, two numerical measures of shape – *skewness* and *excess kurtosis* – can be used to test for normality. The values for asymmetry (skewness) and kurtosis between -2 and +2 are considered acceptable in order to prove normal univariate distribution (Hair, et al., 2010; Bryne, 2010; George & Mallery, 2010). However, Hippel (2005) suggested that, as a general rule of thumb:

- If skewness is less than -1 or greater than 1, the distribution is highly skewed;
- If skewness is between -1 and -0.5 or between 0.5 and 1, the distribution is moderately skewed;
- If skewness is between -0.5 and 0.5, the distribution is approximately symmetric.

The descriptive statistic of item parcels of all latent constructs shown in Table 4.1.8 indicated that all the skewness is close to zero, the data set in item parcels are normally distributed.

Kurtosis is also used to measure the data to see whether they are heavy-tailed or light-tailed relative to a normal distribution. The data sets with high kurtosis tend to have heavy tails, or outliers, while data sets with low kurtosis tend to have light tails, or lack of outliers. The expected value of kurtosis for a standard normal distribution is 3 (Balanda, et.al., 1988). However, Hair et al. (2010), Bryne (2010), and Kline (2011) argued that data was considered normal if skewness is between -2 to +2 and Kurtosis is between -7 to +7. Kurtosis shows the multivariate normality for the data and indicates the normality of the data and the assumptions of homoscedasticity and linearity (Kline, 2011).

The descriptive statistic of item parcels of all latent constructs shown in Table 4.1.8 indicated that all the kurtosis is close to zero, the data set in item parcels are normally

distributed symmetrically with well-behaved tails. The histogram in Appendix F shows the verification of the symmetry.

Table 4.1.8: ***Descriptive statistic of item parcels of all latent variables***

Parcels	Mean	S.D.	Skewness	Std. error of skewness	Kurtosis	Std. error of kurtosis	Min.	Max.
MIND_PF	21.0152	2.82229	0.153	0.107	0.033	0.213	13.00	30.00
MIND_PF	20.3396	2.79563	0.034	0.107	0.192	0.213	10.00	30.00
MIND_PF	16.6774	2.50448	0.008	0.107	0.120	0.213	8.000	24.00
MIND_PF	16.0877	2.51950	0.278	0.107	0.356	0.213	8.000	25.00
FNA_P1	9.54198	2.95992	-0.132	0.107	-0.718	0.213	3.000	15.00
FNA_P2	9.70229	3.26624	-0.135	0.107	-0.807	0.213	3.000	15.00
FNA_P3	6.41221	2.23091	-0.225	0.107	-0.719	0.213	2.000	10.00
CM_P1	10.1908	3.91421	0.418	0.107	-0.440	0.213	4.000	20.00
CM_P2	9.71565	4.29696	0.484	0.107	-0.659	0.213	4.000	20.00
CM_P3	8.47901	4.01830	0.939	0.107	0.232	0.213	4.000	20.00
CM_P4	9.04771	3.89189	0.716	0.107	-0.097	0.213	4.000	20.00
PC_P1	9.15840	2.89519	-0.076	0.107	-0.492	0.213	3.000	15.00
PC_P2	9.16221	2.85909	-0.137	0.107	-0.395	0.213	3.000	15.00
PC_P3	9.68321	2.83565	-0.219	0.107	-0.444	0.213	3.000	15.00
IF_P1	5.96183	3.06938	0.985	0.107	0.397	0.213	3.000	15.00
IF_P2	3.94084	2.13106	0.940	0.107	0.078	0.213	2.000	10.00
IF_P3	4.06489	2.15897	0.869	0.107	0.000	0.213	2.000	10.00
FLA_P1	20.9217	6.05768	0.061	0.107	-0.625	0.213	7.000	35.00

FLA_P2	20.3797	6.20698	0.224	0.107	-0.705	0.213	7.000	35.00
FLA_P3	20.9217	4.23988	0.267	0.107	1.296	0.213	7.000	35.00
FLA_P4	20.8492	6.27464	0.028	0.107	-0.391	0.213	7.000	35.00
SE_P1	14.1622	3.49192	-0.401	0.107	-0.015	0.213	4.000	20.00
SE_P2	10.4961	2.70577	-0.398	0.107	-0.066	0.213	3.000	15.00
SE_P3	10.7709	2.52729	-0.329	0.107	0.078	0.213	3.000	15.00
FLU_P1	11.7022	3.98120	-0.216	0.107	-0.270	0.213	4.000	20.00
FLU_P2	8.53435	3.00044	-0.165	0.107	-0.458	0.213	3.000	15.00
FLU_P3	8.78244	2.99176	-0.224	0.107	-0.270	0.213	3.000	15.00

N: valid = 524, missing = 0

Common Method Bias

Common method bias (CMB) happens when variations in responses are caused by the instrument rather than the actual predispositions of the respondents that the instrument attempts to uncover. In other words, the instrument introduces a bias in the analysis, which is contaminated by the 'noise' stemming from the biased instruments.

One of the simplest ways to test if CMB in exploratory factor analysis is to use Harman's single factor score, in which all items (measuring latent variables) are loaded into one common factor (CLF) and constrained so that there is no rotation. If the total variance for a single factor is less than 50%, it suggests that CMB does not affect data, hence the results (Harman, 1960; Podsakoff, et.al., 2003).

This first technique (Harman, 1960) uses exploratory factor analysis where all variables are loaded onto a single factor (CLF in Figure 4.1.1) and constrained so that there is no rotation (Podsakoff et al, 2003). This new factor is typically not in the researcher’s model; it is introduced solely for this analysis and then discarded. A common method bias (CMB)

can be indicated by the average variance extracted (AVE), a measure of the amount of variance captured by a construct in relation to the amount of variance due to measurement error. If the newly introduced common latent factor explains more than 50% of the average variance extracted (AVE), then common method bias may be present.

The data used in this study were collected by only one method, the questionnaire. The researcher has tried to reduce the common method bias (CMB) by using negative items or reversing some questions in the questionnaires. The Herman's single factor score method was also used to indicate common method bias. Since AMOS did not provide average variance extracted (AVE) result, AVE was then manually calculated by squaring the factor loading of each item, adding all the scores and then dividing it by the number of items. The formula is given by: K^2/n where K= Factor loading, n = the number of items.

The results shown in this study (Table 4.1.9) revealed that AVE is less than 50% (41.76%) and model fit is very poor. Therefore, probability of common method bias (CMB) in this study is very low.

Table 4.1.9: ***Standard regression weights (Group number 1 – default model)***

				UnStd. Estimate	S.E.	C.R.	P	Std. Estimate	AVE
1	MIND_PF1	<---	Common Lead Factor	1				0.036	
2	MIND_PF2	<---	Common Lead Factor	1.927	2.653	0.726	0.468	0.07	0.417651
3	MIND_PF3	<---	Common Lead Factor	0.355	1.171	0.303	0.762	0.015	
4	MIND_PF4	<---	Common Lead Factor	1.261	1.892	0.666	0.505	0.051	

5	FNA_P1	<---	Common Lead Factor	21.824	26.745	0.816	0.414	0.754
6	FNA_P2	<---	Common Lead Factor	25.148	30.816	0.816	0.414	0.787
7	FNA_P3	<---	Common Lead Factor	15.941	19.537	0.816	0.415	0.731
8	CM_P1	<---	Common Lead Factor	32.919	40.331	0.816	0.414	0.860
9	CM_P2	<---	Common Lead Factor	36.096	44.223	0.816	0.414	0.859
10	CM_P3	<---	Common Lead Factor	31.821	38.99	0.816	0.414	0.810
11	CM_P4	<---	Common Lead Factor	30.267	37.088	0.816	0.414	0.795
12	PC_P1	<---	Common Lead Factor	16.937	20.77	0.815	0.415	0.598
13	PC_P2	<---	Common Lead Factor	19.357	23.727	0.816	0.415	0.692
14	PC_P3	<---	Common Lead Factor	20.375	24.971	0.816	0.415	0.735
15	INF_P1	<---	Common Lead Factor	21.491	26.34	0.816	0.415	0.716
16	INF_P2	<---	Common Lead Factor	15.296	18.746	0.816	0.415	0.734
17	INF_P3	<---	Common Lead Factor	15.557	19.066	0.816	0.415	0.737

18	FLA_P1	<---	Common Lead Factor	51.458	63.044	0.816	0.414	0.869
19	FLA_P2	<---	Common Lead Factor	53.648	65.724	0.816	0.414	0.884
20	FLA_P3	<---	Common Lead Factor	29.064	35.624	0.816	0.415	0.701
21	FLA_P4	<---	Common Lead Factor	54.26	66.474	0.816	0.414	0.884
22	SE_P1	<---	Common Lead Factor	-15.946	19.578	-0.814	0.415	-0.467
23	SE_P2	<---	Common Lead Factor	-11.561	14.2	-0.814	0.416	-0.437
24	SE_P3	<---	Common Lead Factor	-10.484	12.881	-0.814	0.416	-0.424
25	FLU_P1	<---	Common Lead Factor	-14.766	18.157	-0.813	0.416	-0.379
26	FLU_P2	<---	Common Lead Factor	-10.79	13.272	-0.813	0.416	-0.368
27	FLU_P3	<---	Common Lead Factor	-10.6	13.04	-0.813	0.416	-0.362

Model fit indices: Chi-Square= 9028.415, df=324, p=.000; χ2/df = 27.865; GFI=.357; CFI=.460; TLI=.415; PNFI=.417; RMSEA=.227 (90%CI = .223 - .231) pClose=.000

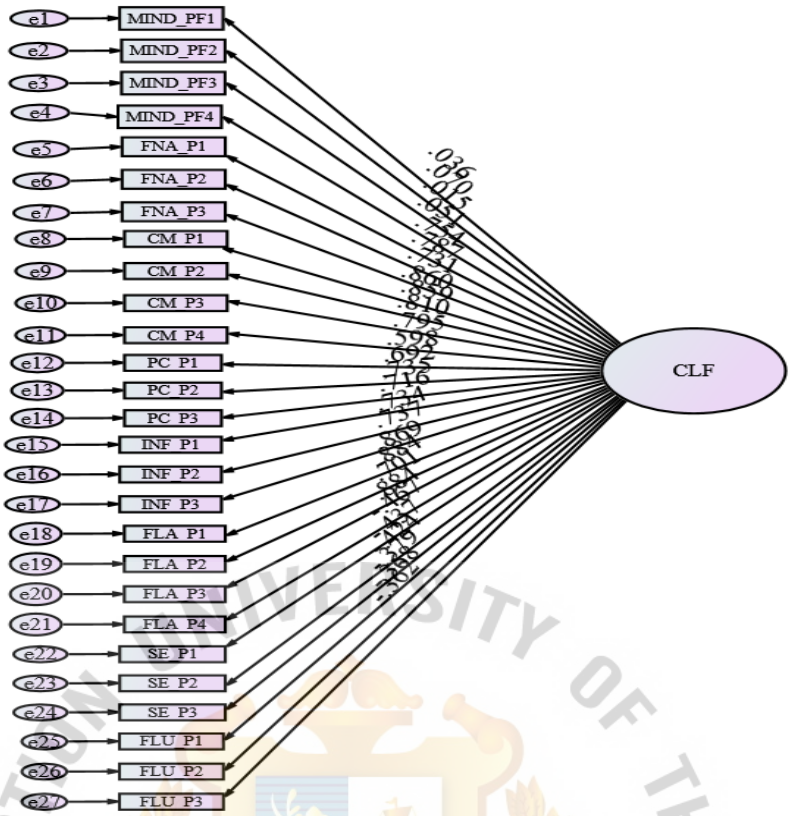

Figure 4.1.1: ***An exploratory factor analysis where all variables are loaded onto one common loading factor***

Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) is a multivariate statistical procedure that is used to test how well the measured variables represent the number of constructs. CFA seeks to validate the existence of theoretical constructs by empirically testing the relationships between observed and latent variables (Crockett, 2012). Confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) are similar techniques, but in exploratory factor analysis (EFA), data is simply explored and provides information about the numbers of factors required to represent the data. In exploratory factor analysis, all measured variables are related to every latent variable. But in confirmatory factor analysis (CFA), researchers can specify the number of factors required in the data and which measured variable is related

to which latent variable. Hair, et.al., (2006) suggested that the preferred minimum number of indicators to represent each of the model's latent constructs is three. This can be achieved by using item parcels to represent the original number of items for each latent construct.

In this study, confirmatory factor analysis (CFA) was carried out to evaluate the adequacy of the factor structure identified in the exploratory factor analysis (EFA), to explicitly posit an *a priori* model, and to assess the fit of this model to the observed data.

Construct Validity (convergent and discriminant validity)

Construct validity is one of the most important concepts in all of psychological research. It is used as an index of a variable that is not itself directly observable (Western & Rosenthal, 2003). It refers to the extent to which a measure adequately assesses the construct it purports to assess (Nunnally & Bernstein, 1994).

There are two subtypes of construct validity, convergent validity, and discriminant validity.

Convergent validity and discriminant validity can be determined by the correlation coefficient to estimate the degree to which any two measures are related to each other. Though, there's no rule of thumb whether what value is considered high or low, the convergent correlations should always be higher than the discriminant ones.

From Table 4.1.4 (page 107), the patterns of intercorrelations among all measures revealed that correlations between theoretically similar variables or convergent validity (such as fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), and, inferiority feeling (IF), were quite high; while correlations between theoretically dissimilar measures or discriminant validity (such as mindfulness (MIND) and foreign language anxiety (FLA) were quite low.

Model 1: Confirmatory Factor Analysis (First-order latent factors)

In the first step of confirmatory factor analysis (CFA), all the 8 latent variables in the conceptual framework including; mindfulness (MIND), fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (IF), foreign language anxiety (FLA), self-efficacy (SE), and foreign language fluency (FLU), were evaluated.

The construct validity of the measurement comprises of convergent validity and discriminant validity. The average variance extracted (AVE) value were used to identify the convergent validity. The average variance extracted (AVE) of each variable in Table 4.1.10 were the sum of the square root of standardized estimate of item parcels, then divided by number of parcels in each variable. The AVE of all variables are greater than .5, which indicates the convergent validity (Hair, et.al.,2006). In other words, the item parcels of each construct variables are related within each other.

Discriminant validity was determined by the correlation among latent factors. If the AVE value is greater than square correlation (r^2) (see Table 4.1.10, 4.1.11), the discriminant validity of the variables was established (Hair, et.al., 2006). The comparison between AVE and (r^2), revealed that the AVE of all variables were greater than the square correlation (r^2), indicating the discriminant validity of the variables.

Overall, the first-order latent factors model (Figure 4.1.2) has shown the correlation among the 8 latent constructs with good construct validity with a strong relationship with convergent construct validity and no relationship for discriminant construct validity. In other words, the constructs which were meant to be related were related and were not related to something unexpected.

However, since the 4 irrational thoughts comprises of fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), and inferiority feeling

(INF), the researcher has tested the 4 irrational thoughts as one single factor in the next step.

Table 4.1.10: ***Confirmatory factor analysis of first-order latent factors***

No	Indicants (Item parcels)	Paths	Latent Factors	Unstd. Estimate	S.E.	C.R.	P	Std. Estimate	Average Variance Extracted	Construct Reliability
F1	MIND_PF1	<---		1.000				0.772		
F2	MIND_PF2	<---	Mindfulness	1.028	0.062	16.532	***	0.794	0.532	0.819
F3	MIND_PF3	<---	(MIND)	0.823	0.054	15.147	***	0.710		
F4	MIND_PF4	<---		0.736	0.055	13.478	***	0.631		
F5	FNA_P1	<---	Fear of	1.000				0.878		
F6	FNA_P2	<---	NonAchiev	1.195	0.035	33.799	***	0.951	0.836	0.939
F7	FNA_P3	<---	ement (FNA)	0.784	0.025	31.151	***	0.913		
F8	CM_P1	<---	Concern	1.000				0.943		
F9	CM_P2	<---	for	1.091	0.025	42.907	***	0.939	0.845	0.956
F10	CM_P3	<---	mistakes	0.970	0.027	35.802	***	0.893		
F11	CM_P4	<---	(CM)	0.947	0.026	36.798	***	0.900		
F12	PC_P1	<---	Perfectionist	1.000				0.857		
F13	PC_P2	<---	Cognitions	1.062	0.039	27.077	***	0.921	0.736	0.893
F14	PC_P3	<---	(PC)	0.903	0.041	21.805	***	0.790		
F15	INF_P1	<---	Inferiority	1.000				0.954		
F16	INF_P2	<---	Feelings	0.681	0.016	43.665	***	0.935	0.882	0.957
F17	INF_P3	<---	(INF)	0.684	0.016	42.335	***	0.928		
F18	FLA_P1	<---		1.000				0.947	0.802	0.941

F19	FLA_P2	<---	Foreign	1.021	0.022	46.336	***	0.947		
F20	FLA_P3	<---	Language	0.533	0.024	22.053	***	0.721		
F21	FLA_P4	<---	Anxiety (FLA)	1.034	0.023	45.794	***	0.945		
F22	SE_P1	<---	Self-	1.000				0.974		
F23	SE_P2	<---	Efficacy	0.741	0.016	47.285	***	0.932	0.893	0.962
F24	SE_P3	<---	(SE)	0.690	0.015	46.439	***	0.928		
F25	FLU_P1	<---	Foreign	1.000				0.955		
F26	FLU_P2	<---	Language	0.747	0.015	50.111	***	0.953	0.918	0.971
F27	FLU_P3	<---	Fluency (FLU)	0.763	0.014	54.208	***	0.966		

Model fit indices: Chi-Square= 935.457, df=292, p=.000; $\chi 2/df = 3.204$; GFI=.881; CFI=.960; TLI=.952; PNFI=.782; RMSEA=.065 (90%CI = .060 - .070) pClose=.000

Table 4.1.11: ***Discriminant validity and Correlation among first-order latent factors***

Latent factors		**MIND**	**FNA**	**CM**	**PC**	**INF**	**FLA**	**SE**	**FLU**
MIND		***0.532***							
FNA	r^2	0.002							
	(r)	(0.041)	***0.836***						
CM	r^2	0.003	0.486						
	(r)	(0.053)	(0.697)	***0.845***					
PC	r^2	0.038	0.354	0.507					
	(r)	(0.195)	(0.595)	(0.712)	***0.736***				

INF	r^2	0.002	0.238	0.554	0.353	***0.882***		
	(r)	(0.046)	(0.488)	(0.744)	(0.594)			
FLA	r^2	0.004	0.610	0.572	0.461	0.444	***0.802***	
	(r)	(0.066)	(0.781)	(0.756)	(0.679)	(0.666		
SE	r^2	0.080	0.213	0.129	0.042	0.076	0.203	***0.893***
	(r)	(0.282)	(-0.461)	(-0.359)	(-0.205)	(-0.276)	(-0.450)	
FLU	r^2	0.055	0.178	0.044	0.013	0.023	0.194	0.433
	(r)	(0.234)	(-0.422)	(-0.210)	(-0.115)	(-0.152)	(-0.441)	(0.658)

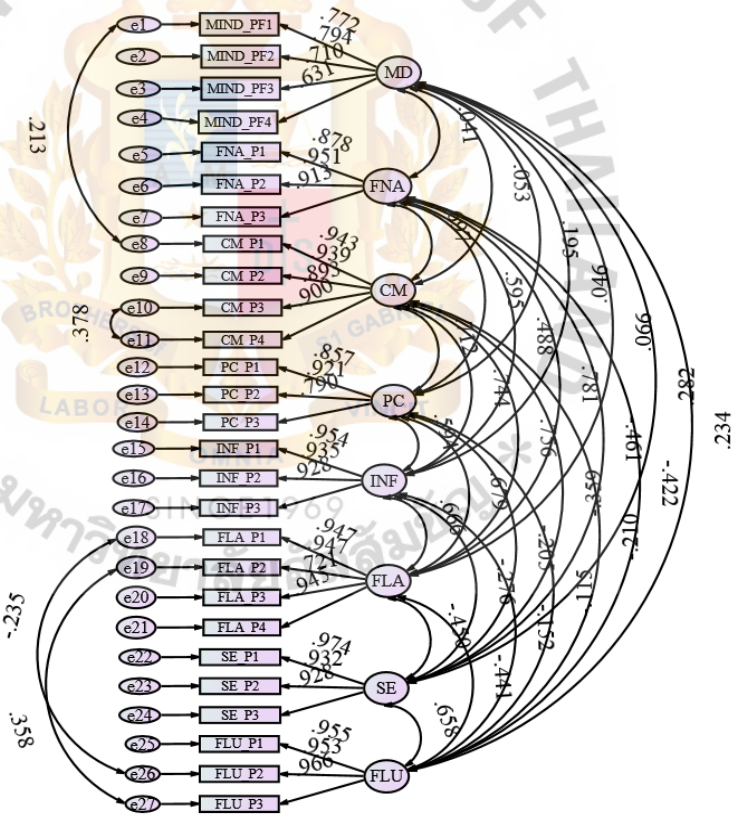

Figure 4.1.2: ***The first-order latent factors model representing 8 latent constructs of mindfulness (MIND), fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF), foreign language anxiety (FLA), self-efficacy (SE), and foreign language fluency (FLU)***

Model 2: Confirmatory Factor Analysis (Second-order latent factors)

In the second confirmatory factor analysis, the 4 latent factors of fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), and, inferiority feeling (INF) were treated as one second-order latent factor, irrational thoughts (IRT) to see whether the second model fit the data set better.

The average variance extracted (AVE) of each variable in Table 4.1.12 are all greater than .5, which indicates convergent validity. In other words, the 5 first-order latent construct variables and 4 second-order latent construct variables are related to each other.

The square correlation (r^2) were shown in Table 4.1.13, and the comparison between AVE and (r^2) in Table 4.20, revealed that the AVE of all variables were greater than the square correlation (r^2), indicating the discriminant validity of the variables was established.

The second-order latent factors model (Figure 4.1.3) has also shown the correlation among first and second-order latent constructs with high construct validity.

Table 4.1.12: ***Confirmatory factor analysis of second-order latent factors***

No	First-Order latent factors		Second-order latent factor	Unstd. Estimate	S.E.	C.R.	P	Std. Estimate	AVE	Con-struct Reli-ability
S1	Fear of Non-Achievement	<---	Irrational Thoughts (IRT)	1				0.830	0.651	0.881
S2	Concern for mistakes	<---		1.465	0.078	18.880	***	0.859		

S3	Perfectionist Cognitions	<---		0.88	0.057	15.528	***	0.781		
S4	Inferiority Feelings	<---		1.013	0.069	14.627	***	0.752		
	Indicants (item parcels)		**First-order latent factors**							
F1	MIND_PF1	<---		1				0.770		
F2	MIND_PF2	<---	Mindfulness	1.031	0.063	16.489	***	0.795	0.532	0.819
F3	MIND_PF3	<---	(MIND)	0.825	0.055	15.115	***	0.710		
F4	MIND_PF4	<---		0.739	0.055	13.477	***	0.632		
F5	FNA_P1	<---	Fear of Non-	1				0.883		
F6	FNA_P2	<---	Achievement	1.165	0.035	33.573	***	0.942	0.836	0.939
F7	FNA_P3	<---	(FNA)	0.783	0.025	31.73	***	0.917		
F8	CM_P1	<---	Concern	1				0.943		
F9	CM_P2	<---	for	1.091	0.025	42.888	***	0.939	0.845	0.956
F10	CM_P3	<---	mistakes	0.971	0.027	35.814	***	0.893		
F11	CM_P4	<---	(CM)	0.947	0.026	36.756	***	0.900		
F12	PC_P1	<---		1				0.846		
F13	PC_P2	<---	Perfectionist	1.072	0.041	26.177	***	0.916	0.734	0.892
F14	PC_P3	<---	Cognitions (PC)	0.933	0.042	22.011	***	0.804		
F15	INF_P1	<---	Inferiority	1				0.954		
F16	INF_P2	<---	Feelings	0.681	0.016	43.702	***	0.936	0.882	0.957
F17	INF_P3	<---	(INF)	0.684	0.016	42.316	***	0.928		

F18	FLA_P1	<---	Foreign	1				0.947		
F19	FLA_P2	<---	Language	1.020	0.022	46.266	***	0.947	0.802	0.941
F20	FLA_P3	<---	Anxiety	0.534	0.024	22.089	***	0.722		
F21	FLA_P4	<---	(FLA)	1.034	0.023	45.804	***	0.945		
F22	SE_P1	<---	Self-	1				0.974		
F23	SE_P2	<---	Efficacy	0.741	0.016	47.284	***	0.932	0.893	0.962
F24	SE_P3	<---	(SE)	0.690	0.015	46.415	***	0.928		
F25	FLU_P1	<---	Foreign	1				0.954		
F26	FLU_P2	<---	Language	0.747	0.015	49.935	***	0.952	0.917	0.971
F27	FLU_P3	<---	Fluency (FLU)	0.764	0.014	54.227	***	0.967		

Model fit indices: Chi-Square= 105.046, df=303, p=.000; $\chi 2/df = 3.317$; GFI=.868; CFI=.956; TLI=.950; PNFI=.811; RMSEA=.067 (90%CI = .063 - .071) pClose=.000

Table 4.1.13: ***Discriminant validity and Correlation among second-order latent factors***

Latent factors		**MIND**	**IRT**	**FLA**	**SE**	**FLU**
MIND		***0.532***				
IRT	r^2	0.008	***0.651***			
	(r)	(0.092)				
FLA	r^2	0.004	0.814	***0.802***		
	(r)	(0.067)	(0.902)			
SE	r^2	0.079	0.181	0.203	***0.893***	
	(r)	(0.281)	(-0.425)	(-0.450)		

FLU	r^2	0.054	0.095	0.194	0.433	***0.917***
	(r)	(0.232)	(-0.308)	(-0.441)	(0.658)	

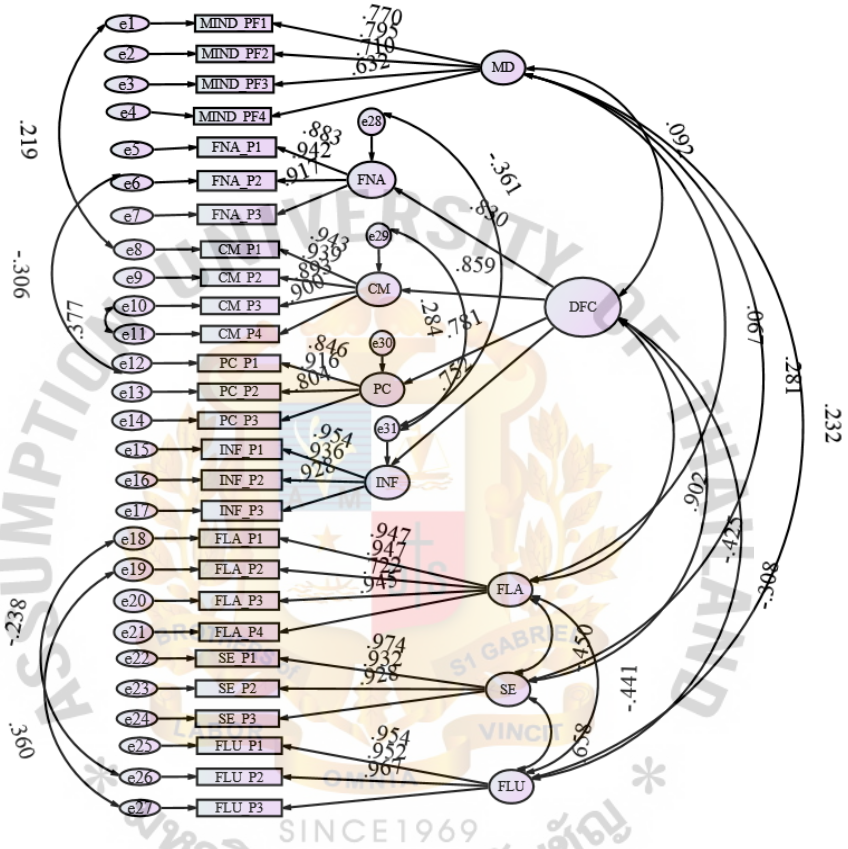

Figure 4.1.3: ***The second-order latent factors model representing 8 first-order latent constructs of mindfulness (MIND), fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF), foreign language anxiety (FLA), self-efficacy (SE), and foreign language fluency (FLU); and 1 second-order latent factor of irrational thought (IRT)***

Confirmatory Factor Analysis model evaluation

Since both the first and second-order latent constructs revealed high construct reliability and validity, the two models were compared to choose the model with a better fit. The statistical value in Table 4.1.14 shows the comparative fit index of the two models.

Hooper, et.al. (2008) suggested absolute fit indices, which indicated how well an *a priori* model fits the sample data, and which proposed model had the most superior fit, were the Chi-squared test, RMSEA, GFI, AGFI, RMR and SRMR. These measures provide the most fundamental indication of how well the proposed theory fits the data.

The comparative fit index (CFI) analyzes the model fit by examining the discrepancy between the data and the hypothesized model, while adjusting for the issues of sample size inherent in the chi-squared test of model fit, and the normed fit index. CFI values range from 0 to 1, with larger values indicating better fit. The GFI, CFI, TLI and PNFI – parsimonious fit index should be around .8 to .9 (Bentler, 1990).

Parsimony Normed Fit Index (PNFI) was adjusted for degrees of freedom to seriously penalize for model complexity which results in parsimony fit index values that are considerably lower than other goodness of fit indices. While no threshold levels have been recommended for these indices, it is possible to obtain parsimony fit indices within the .50 region while other goodness of fit indices achieve values over .90 (Mulaik et. Al., 1989).

The Chi-Square value evaluates overall model fit and, assesses the magnitude of discrepancy between the sample and fitted covariances matrices (Hu and Bentler, 1999: 2). A good model fit would provide an insignificant result at a 0.05 threshold (Barrett, 2007). However, due to the restrictiveness of the Model Chi-Square, a relative/normed chi-square ($\chi 2/df$), alternative indices to assess model fit was used to indicate the model fit. The recommendations range of a relative/normed chi-square ($\chi 2/df$ is between 2.0 – 5.0. (Wheaton et al, 1977; Tabachnick and Fidell, 2007).

Goodness-of-fit statistic (GFI) can be used as an alternative to the Chi-square test to show how closely the model comes to replicating the observed covariance matrix (Diamantopoulos & Siguaw, 2000). Traditionally an omnibus cut-off point of 0.90 has been recommended for the GFI, however, when factor loadings and sample sizes are low a higher cut-off of 0.95 is more appropriate (Miles and Shevlin, 1998).

The root mean square error of approximation (RMSEA) tells us how well the model, with unknown but optimally chosen parameter estimates would fit the population covariance matrix (Byrne, 1998). In other words, the RMSEA favors parsimony in that it will choose the model with the lesser number of parameters. Recommendations for RMSEA cut-off points are: if the value is in the range of 0.05 to 0.10 as an indication of fair fit, and values above 0.10 indicated poor fit; and value between 0.08 to 0.10 provides a mediocre fit and below 0.08 shows a good fit (MacCallum et al, 1996) However, more recently, a cut-off value close to .06 (Hu and Bentler, 1999) or a stringent upper limit of 0.07 (Steiger, 2007) seems to be the general consensus amongst authorities in this area.

The normed fit index (NFI) analyzes the discrepancy between the chi-square value of the hypothesized model and the Chi-square value of the null model. However, NFI tends to be negatively biased. The non-normed fit index (NNFI) also known as Tucker-Lewis index (TLI) was established to resolve some of the issues of negative bias. Values for both the NFI and NNFI should range between 0 and 1, with a cutoff of .95 or greater indicating a good model fit (Bentler, 1990).

From Table 4.1.22, the Chi-square, df, p, and $\chi 2/df$ values of model 1 and 2 were in the range, indicated that both models good fit the data. The other model fit indices of model 1 and model 2 all fell into the acceptable range, including; GFI – 0.081 and 0.868 (good fit), CFI - 0.960 and 0.956 (considerable high), TLI – 0.952 and 0.950 (very good fit), PNFI - 0.782 and 0.811 (parsimoniously fit), and RMSEA – 0.065 and 0.067 (very good fit).

Therefore, the 2 models had a very good fit to the data. However, the model fit indices of model 2 was slightly higher than model 1. Therefore, the model 2, a second-order latent factor model was chosen for the path model.

Table 4.1.14: ***Confirmatory factor analysis evaluation of completing model***

Confirmatory factor analysis: (Data set: Item parcels_MM.sav) N= 524

Evaluation of completing model (χ2, df, p, χ2/df, GFI, CFI, TLI, PNFI)

Model	χ2	df	p	χ2/df	GFI	CFI	TLI	PNFI
CFI First-order (M1)	935.415	292.000	0.000	3.204	0.881	0.960	0.952	0.782
CFI Second-Order (M2)	1005.046	303.000	0.000	3.317	0.868	0.956	0.950	0.811

Evaluation of completing model (RMSEA)

Model	RMSEA			M2 - M1		
	Value	90% CI	Pclose	Δχ2	Δdf	p
CFI First-order (M1)	0.065	.060 - .070	0.000			
CFI Second-order (M2)	0.067	.062 - .071	0.000	69.631	11	0.000

Study II (Path Analysis)

Overview results of the study II

The study II aims to examine and test purported causal relationship among mindfulness (MIND), fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (IF), foreign language anxiety (FLA), self-efficacy (SE), and foreign language fluency (FLU), as proposed in the conceptual framework. The results of the structural equation modeling provide information about the plausibility of the researcher's hypothesized model.

Structural Equation Modeling and Path Analysis

The Structural Equation Model (SEM) was used to find if the data fitted the model. The SEM consists of two distinct components, the measurement model and the structural model. The measurement model relates observed variables to latent constructs; therefore, it describes the measurement properties of the observed variables. The structural model provides an estimation of the hypothesized interrelationships among the variables (Jöreskog, et.al., 2000).

To test the measurement model, the structural model is saturated by allowing all the latent to correlate. Any misfit is shown in the measurement model. The measurement model must yield a good fit to the data before the structural model can be analyzed (Crockett, 2012).

Samples for SEM

The total sample of 1,358 respondents, a random sample of 834 (60%) were used for structural equation model analysis. The sample participants were male: n=231, 27.70%;

female: n=603, 72.30%). The participants were students (n=334, 40.05%), employees (n=298, 35.73%), business owners (n=74, 8.87%), self-employed (n=88, 10.55%), and unemployed (n=40, 4.80%).

The age of the 834 participants fell into five ranges,18-23 years old (n=329, 39.45%), 24-35 years old (n=111, 13.31%), 36-45 years old (n=122, 14.63%, 46-55 years old (n=164, 19.66%), 55 years old and above (n=108, 12.95%).

All participants of both groups speak Thai as their native language (n=832, 99.76%) and speak English and Chinese as their foreign language (n=765, 91.73%; n=27, 3.24%) respectively.

The religious dominances were Buddhism (n=757, 90.70%), Christianity (n=24, 2.88%) and Islam (n=26, 3.12%).

The participants' meditation practices varied from never (n=242, 29.02%) to a few times a year (n=341, 40.89%), a few times a month (n=126, 15.11%), a few times a week (n=71, 8.51%) and every day (n=54, 6.47%).

The summary of biographical data of the samples used in SEM are shown in Table 4.1.1 on page 99.

Models Analysis

From the Confirmatory factor analysis (CFA) in Study I, the results proposed that the 2 models; the first-order latent factor model, and, the second-order latent factor model, both fit the data set. Yet, the second-order latent factor model, which regarded that fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF) represented irrational thought (IRT), better fit the data. Therefore, the researcher has done 5 SEM analyses to find the model that best fit the data, as the following:

The first model (M1) was the full hypothetical model which comprised of all 8 construct variables; mindfulness (MIND), fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF), foreign language anxiety (FLA), self-efficacy (SE), and foreign language fluency (FLU).

The second model (M2) was the modified hypothetical model which comprised of only 6 construct variables; mindfulness (MIND), fear of non-achievement (FNA), perfectionistic cognition (PC), foreign language anxiety (FLA), self-efficacy (SE), and foreign language fluency (FLU), of which the path connecting concern for mistakes (CM) and inferiority feeling (INF) were removed because of non-significant standardized coefficient.

The third model (M3) was the full structural equation model which comprised of 4 first-order constructs - fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF) linked by a second-order construct irrational thought (IRT); and mindfulness (MIND) is linked to irrational thought (IRT) and foreign language anxiety (FLA). Foreign language anxiety (FLA) is linked to self-efficacy (SE); and self-efficacy (SE) is linked to foreign language fluency (FLU).

The fourth model (M4) was the full structural equation model which comprised of 4 first-order constructs - fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF) linked by a second-order construct irrational thought (IRT). Mindfulness (MIND) is linked to irrational thought (IRT), foreign language anxiety (FLA), and foreign language fluency (FLU). Irrational thought (IRT) is linked to foreign language anxiety (FLA), and foreign language fluency (FLU). Foreign language anxiety (FLA) is linked to self-efficacy (SE) and foreign language fluency (FLU); and self-efficacy (SE) is linked to foreign language fluency (FLU).

The fifth model (M5) was the full structural equation model which comprised of 4 first-order constructs - fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF) linked by a second-order construct irrational thought (IRT). Mindfulness (MIND) is linked to irrational thought (IRT), foreign language anxiety (FLA), self-efficacy (SE) and foreign language fluency (FLU). Irrational thought (IRT) is linked to foreign language anxiety (FLA), and foreign language fluency (FLU). Foreign language anxiety (FLA) is linked to self-efficacy (SE) and foreign language fluency (FLU); and self-efficacy (SE) is linked to foreign language fluency (FLU).

Model 1: Hypothetical model (M1)

The EFA and CFA results in Study I revealed that all 8 latent variables in the conceptual framework or hypothetical model had high correlation and construct validity. However, the SEM analysis result shown in Table 4.2.1 indicated that the relationship between mindfulness (MIND) and concern for mistakes (CM), and the relationship between mindfulness (MIND) and inferiority feeling (IF) (Beta= 0.0033 and 0.0059) were quite low. Therefore, the two variables were later removed in the second model.

Table 4.2.1: ***Proposed Structural relationships (Hypothetical model - 1)***

Structural Equation Model

Structural paths			Unstd. Estimate	S.E.	C.R.	P	Std. Estimate
Perfectionist Cognitions	<---	Mindfulness	0.158	0.049	3.243	0.001	0.131
Fear of Non-Achievement	<---	Mindfulness	0.158	0.05	3.174	0.002	0.123
Concern for mistakes	<---	Mindfulness	0.056	0.066	0.84	0.401	0.033
Inferiority Feelings	<---	Mindfulness	0.079	0.053	1.49	0.136	0.059
Foreign Language Anxiety	<---	Perfectionist Cognitions	0.359	0.065	5.493	***	0.167
Foreign Language Anxiety	<---	Fear of Non-Achievement	1.151	0.068	16.945	***	0.571
Foreign Language Anxiety	<---	Concern for mistakes	0.123	0.064	1.922	0.055	0.080
Foreign Language Anxiety	<---	Inferiority Feelings	0.343	0.06	5.668	***	0.178

Foreign Language Anxiety	<---	Mindfulness	-0.102	0.059	-1.747	0.081	-0.040
Self-Efficacy	<---	Foreign Language Anxiety	-0.336	0.021	-16.088	***	-0.518
Foreign Language Fluency	<---	Self-Efficacy	0.581	0.031	18.91	***	0.551

Mindfulness (MIND) had direct positive influence on fear of non-achievement (FNA, Beta= .123), concern for mistakes (CM, Beta= .033), perfectionistic cognition (PC, Beta= .131), and had strongest influence on inferiority feeling (IF, Beta= .059). Mindfulness (MIND) also had direct negative influence on foreign language anxiety (FLA, Beta= -.040).

Fear of non-achievement (FNA, Beta=.571), concern for mistakes (CM, Beta=.080), perfectionistic cognition (PC, Beta=.167), and inferiority feeling (IF, Beta=.178) all had direct positive influence on foreign language anxiety (FLA), whereas fear of non-achievement (FNA) had the strongest influence on foreign language anxiety (FLA). Foreign language anxiety (FLA) had strong direct influence on self-efficacy (SE, Beta= -.518). Self-efficacy (SE) had strong positive direct influence on foreign language fluency (FLU, .551).

The measurement model and structural model of the hypothetical model 1 was shown in Figure 4.2.1 and 4.2.2.

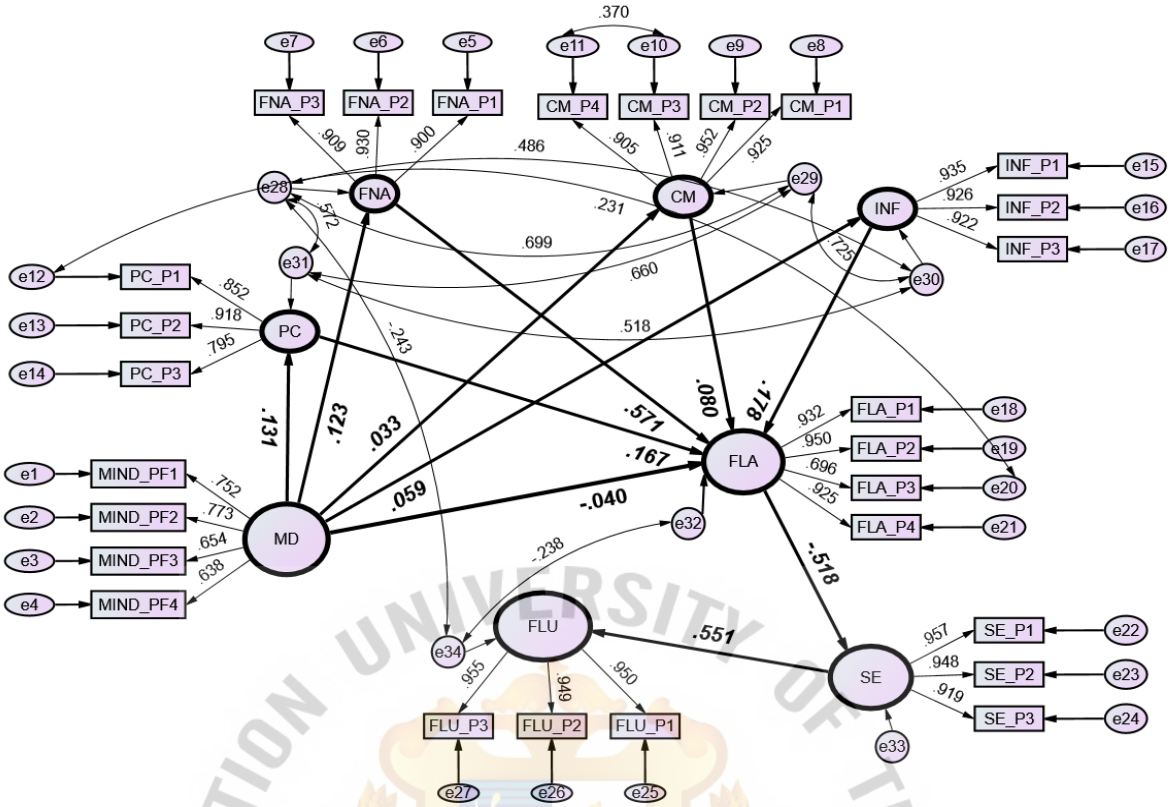

Figure 4.2.1: The measurement model of the hypothetical model 1

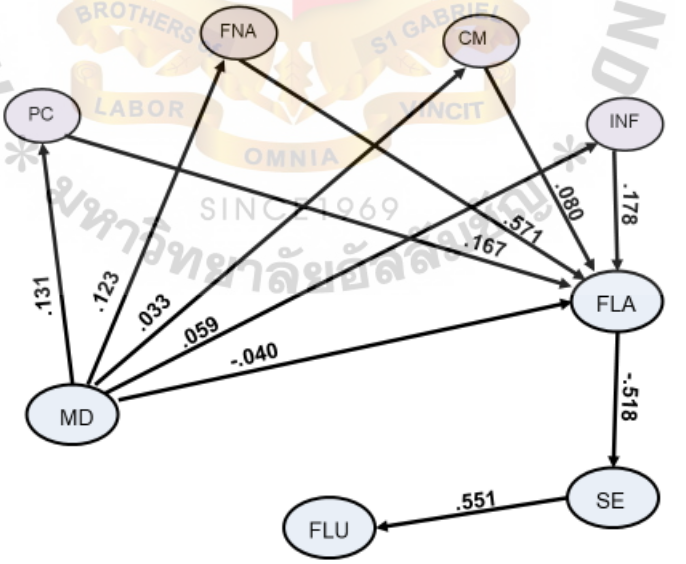

Figure 4.2.2: The structural model of the hypothetical model 1

Model 2: Modified hypothetical model (M2)

As mentioned earlier, the SEM analysis in the first model (M1) result shown in Table 4.2.1 indicated that the relationship between mindfulness (MIND) and concern for mistakes (CM), and the relationship between mindfulness (MIND) and inferiority feeling (IF) (Beta=0.0033 and 0.0058) were quite low. Therefore, in the second model (M2), the direct path between mindfulness (MIND) and concern for mistakes (CM), and mindfulness (MIND) and inferiority feelings (INF) were removed from M1.

However, the relationship between the 8 variables were quite similar to the hypothetical model 1 (compare Table 4.2.1 and 4.2.2).

Table 4.2.2: ***Proposed Structural relationships (Modified hypothetical model)***

Structural paths			Unstd. Estimate	S.E.	C.R.	P	Std. Estimate
Perfectionist Cognitions	<---	Mindfulness	0.127	0.038	3.315	***	0.106
Fear of Non-Achievement	<---	Mindfulness	0.121	0.036	3.333	***	0.094
Foreign Language Anxiety	<---	Perfectionist Cognitions	0.343	0.065	5.295	***	0.159
Foreign Language Anxiety	<---	Fear of Non-Achievement	1.139	0.068	16.872	***	0.565
Foreign Language Anxiety	<---	Concern for mistakes	0.139	0.064	2.185	0.029	0.090
Foreign Language Anxiety	<---	Inferiority Feelings	0.337	0.060	5.574	***	0.175

Foreign Language Anxiety	<---	Mindfulness	-0.336	0.021	-16.038	***	-0.517
Self-Efficacy	<---	Foreign Language Anxiety	0.579	0.031	18.856	***	0.549
Foreign Language Fluency	<---	Self-Efficacy	0.127	0.038	3.315	***	0.106

Mindfulness (MIND) had a little less direct positive influence on fear of non-achievement (FNA, Beta=.094), perfectionistic cognition (PC, Beta=.106), and direct negative influence on foreign language anxiety (FLA, Beta= -.517).

Fear of non-achievement (FNA, Beta= .565), concern for mistakes (CM, Beta= .090), perfectionistic cognition (PC, Beta=.159), and inferiority feeling (IF, Beta= .175) all had direct influence on foreign language anxiety (FLA), whereas fear of non-achievement (FNA) still had the strongest influence on foreign language anxiety (FLA). Foreign language anxiety (FLA) had strong negative direct influence on self-efficacy (SE, Beta= -.517). Self-efficacy (SE) had strong positive direct influence on foreign language fluency (FLU, Beta=.549).

The measurement model and structural model of the modified hypothetical model 2 was shown in Figure 4.2.3 and 4.2.4.

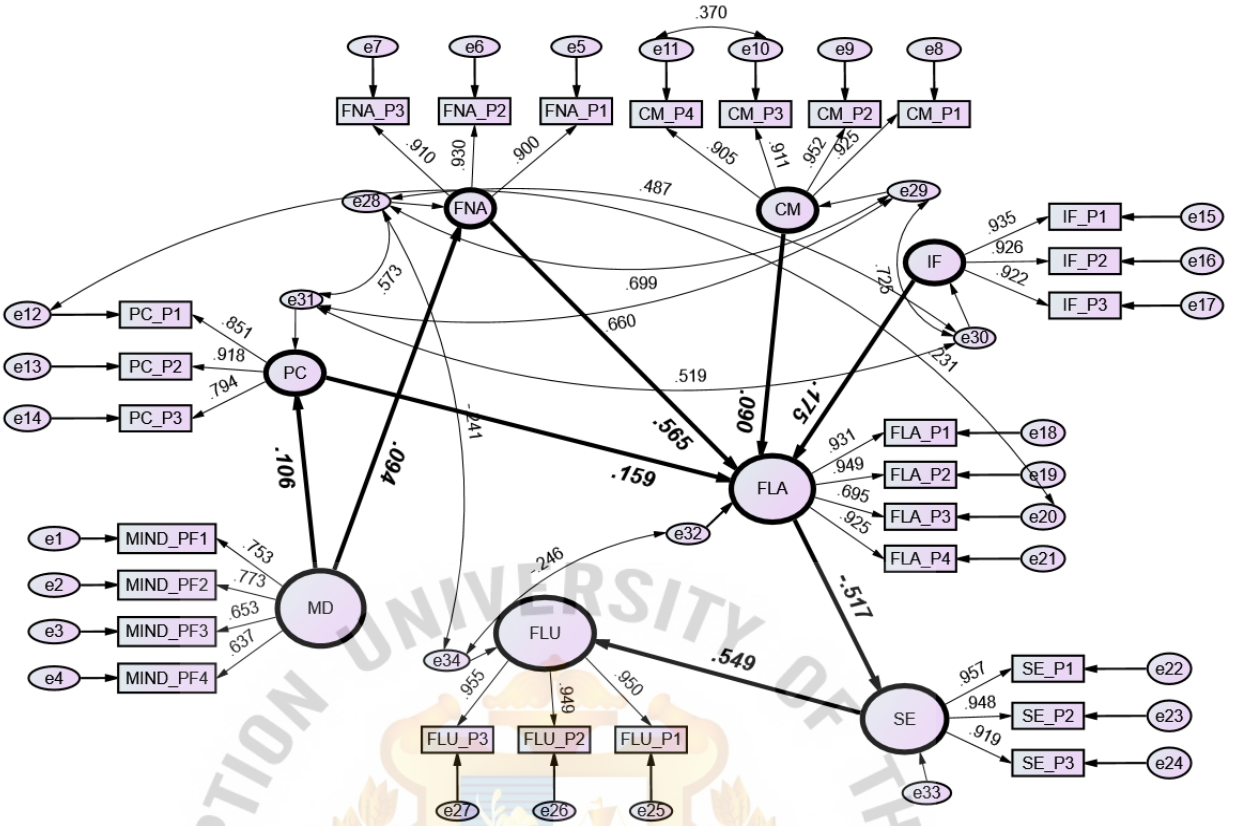

Figure 4.2.3: The measurement model of the modified hypothetical model 2

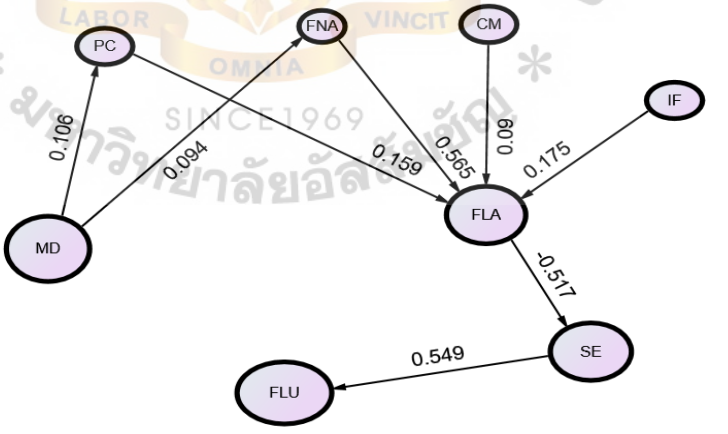

Figure 4.2.4: The structural model of the modified hypothetical model 2

Model 3: Structural equation model (M3)

As mentioned earlier, the results of exploratory factor analysis (EFA) in Study I, proposed that the second-order latent factor model, which regarded that fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF), represented irrational thought (IRT), better fitted the data. Therefore, the SEM analysis was done with the second-order variables FNA, CM, PC and INF all connected to the factor IRT, which was shown in the model 3. The results of the third structural equation model (SEM) was in Table 4.2.3.

Table 4.2.3: ***Structural Equation Model (M3)***

Structural paths			Unstd. Estimate	S.E.	C.R.	P	Std. Estimate
Irrational Thought	<---	Mindfulness	0.094	0.034	2.765	0.006	0.117
Foreign Language Anxiety	<---	Irrational Thought	3.000	0.168	17.844	***	0.929
Foreign Language Anxiety	<---	Mindfulness	-0.186	0.060	-3.085	0.002	-0.072
Self-Efficacy	<---	Foreign Language Anxiety	-0.338	0.021	-16.139	***	-0.519
Foreign Language Fluency	<---	Self-Efficacy	0.704	0.031	22.927	***	0.665

The measurement model of the SEM model 3, shown in Figure 4.2.5, indicated the relationship among the 5 variables. The 4 first-order variables, fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), and inferiority feeling

(IF), were positively related and can be used to explain the second-order variable - irrational thought (IRT). It's not necessary to look at relationship of the 4 second-order variables separately. Therefore, only one latent factor, IRT, was used in the structural model.

Mindfulness (MIND) had a direct positive effect on irrational thoughts (IRT, Beta=.117), a direct negative effect on foreign language anxiety (FLA, Beta=. -072).

Mindfulness (MIND) also indirectly influence with foreign language anxiety (FLA), mediated by irrational thought (IRT).

Irrational thought (IRT) had a direct influence on foreign language fluency (FLA, Beta= .929), and indirect influence on foreign language fluency (FLU) mediated by foreign language anxiety (FLA) and self-efficacy (SE).

Foreign language anxiety (FLA) had a negative direct influence on self-efficacy (SE, Beta= -.519), and an indirect positive influence on foreign language fluency (FLU) mediated by self-efficacy.

Self-efficacy (SE) had a positive direct influence on foreign language fluency (FLU, Beta=.665)

The measurement model and structural model of the hypothetical model 3 was shown in Figure 4.2.5 and 4.2.6.

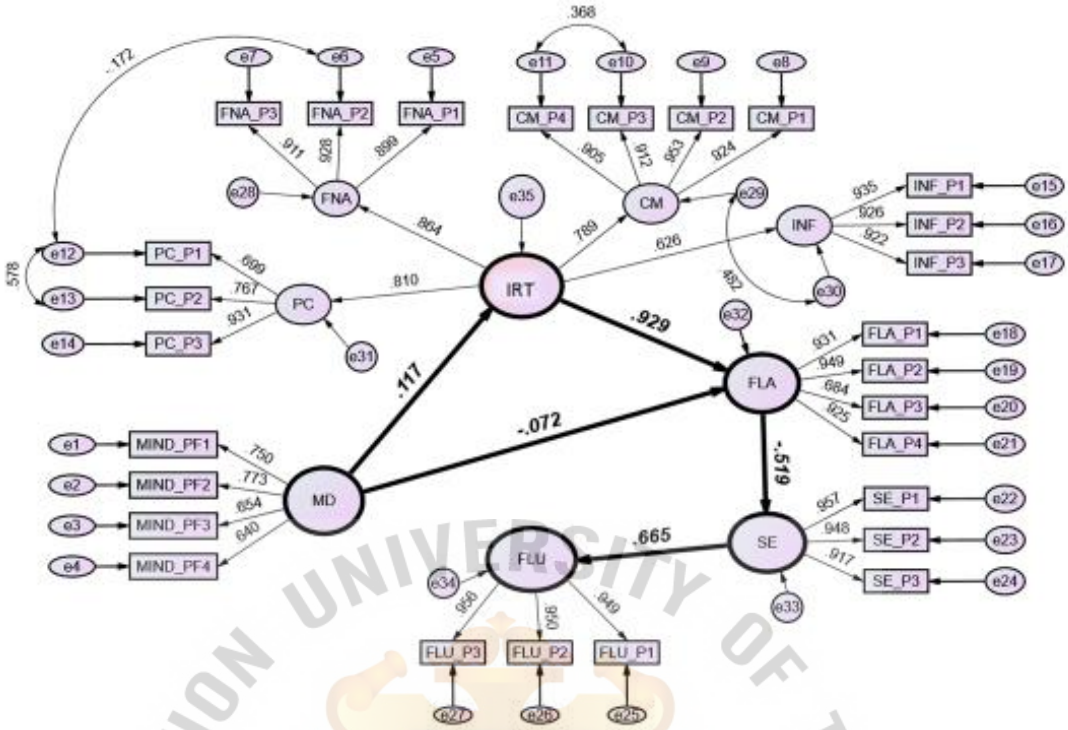

Figure 4.2.5: The measurement model of the SEM model 3

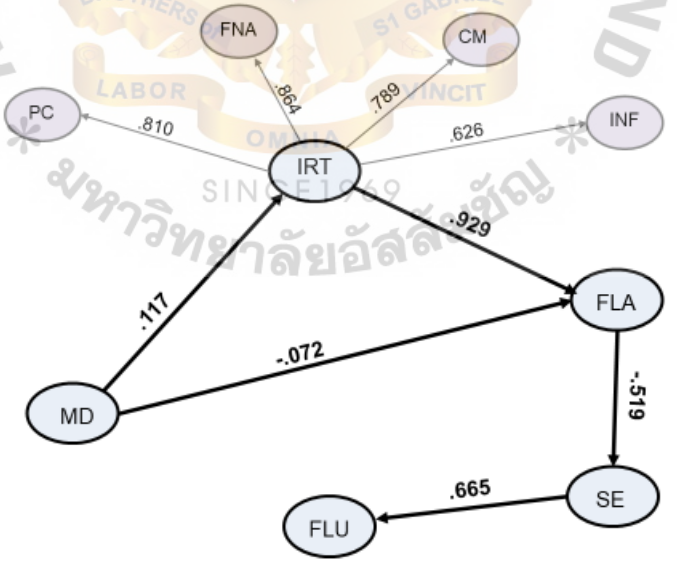

Figure 4.2.6: The structural model of the SEM model 3

Model 4: Structural equation model (M4)

The SEM analysis of the fourth model (M4) was done with the 4 first-order constructs - fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF) were linked by a second-order construct irrational thought (IRT), as in model 3. However, mindfulness (MIND), irrational thought (IRT) and foreign language anxiety (FLA) were also linked to foreign language fluency (FLU). Irrational thought (IRT) is linked to foreign language anxiety (FLA), and foreign language fluency (FLU). Foreign language anxiety (FLA) is linked to self-efficacy (SE) and foreign language fluency (FLU); and self-efficacy (SE) is linked to foreign language fluency (FLU). The results of the fourth structural equation model (SEM) was in Table 4.2.4.

Table 4.2.4: ***Structural Equation Model (M4)***

Structural Model			Unstd. Estimate	S.E.	C.R.	P	Label	Std. Estimate
Irrational thought	<---	Mindfulness	0.094	0.035	2.731	0.006	par2	0.116
Foreign Language Anxiety	<---	Irrational thought	2.958	0.163	18.108	***	par3	0.928
Foreign Language Anxiety	<---	Mindfulness	-0.184	0.061	-3.018	0.003	par4	-0.071
Self-Efficacy	<---	Foreign Language Anxiety	-0.335	0.021	-15.922	***	par6	-0.514

Foreign Language Fluency	<---	Foreign Language Anxiety	-0.433	0.080	-5.407	***	par5	-0.628
Foreign Language Fluency	<---	Mindfulness	0.102	0.057	1.792	0.073	par1	0.057
Foreign Language Fluency	<---	Self-Efficacy	0.598	0.034	17.388	***	par7	0.565
Foreign Language Fluency	<---	Irrational thought	1.062	0.265	4.014	***	par8	0.484

The measurement model of the SEM model 4, shown in Figure 4.10, indicated the relationship among the 5 variables. The 4 first-order variables, fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), and inferiority feeling (IF), were positively related and can be used to explain the second-order variable - irrational thought (IRT), as in model 3.

Mindfulness (MIND) had a direct positive influence on irrational thought (IRT, Beta = .116) and foreign language fluency (FLU, Beta = .057), as well as a direct negative influence on foreign language anxiety (FLA, Beta = -.071).

Mindfulness (MIND) also indirectly influence with foreign language anxiety (FLA) and foreign language fluency (FLU), mediated by irrational thought (IRT).

Irrational thought (IRT) had a direct influence on foreign language fluency (FLU, Beta =.484), and foreign language anxiety (FLA, Beta =.928); and also indirect influence on foreign language fluency (FLU) mediated by foreign language anxiety (FLA).

Foreign language anxiety (FLA) had a strong negative direct influence on foreign language fluency (FLU, Beta = -.628) and self-efficacy (SE, Beta = -.514), and had an indirect positive influence on foreign language fluency (FLU) mediated by self-efficacy (SE).

Self-efficacy (SE) had a strong direct influence on foreign language fluency (FLU, Beta =.565),

The measurement model and structural model of the hypothetical model 4 was shown in Figure 4. 2.7 and 4.2.8.

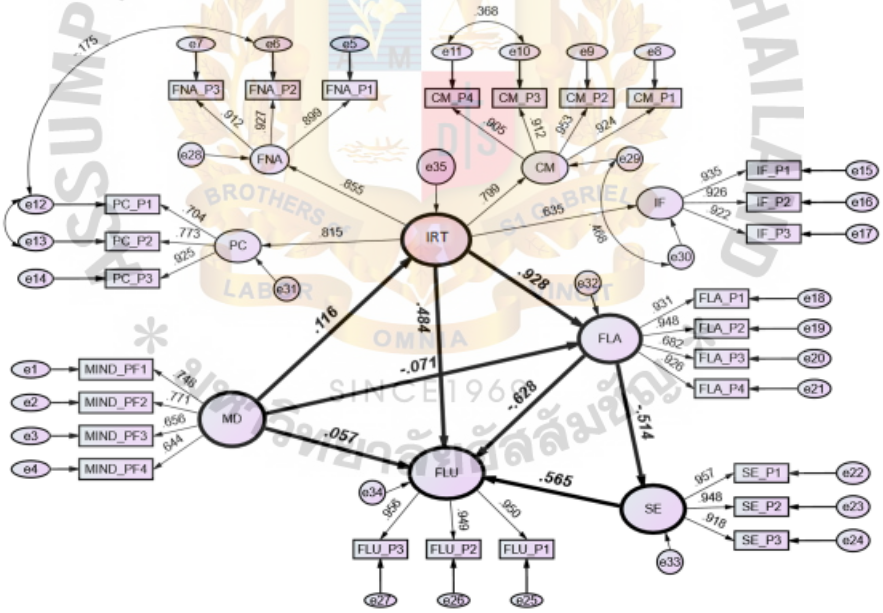

Figure 4.2.7: The measurement model of the SEM model 4

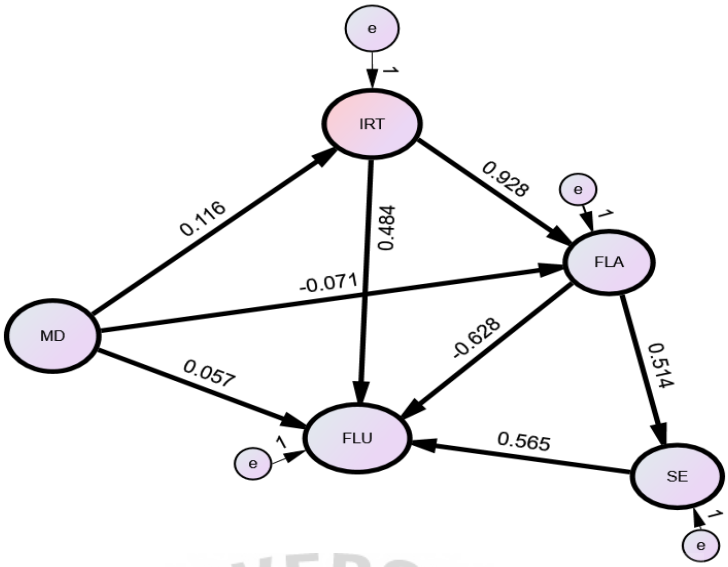

Figure 4.2.8: The structural model of the SEM model 4

Model 5: Structural equation model (M5)

The SEM analysis of the fifth model (M5) was done with the 4 first-order constructs - fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF) were linked by a second-order construct irrational thought (IRT), as in model 3 and 4. However, mindfulness (MIND), irrational thought (IRT), foreign language anxiety (FLA), and self-efficacy (SE) were also linked to foreign language fluency (FLU). Mindfulness (MIND) was also linked to irrational thought (IRT), foreign language anxiety (FLA), self-efficacy (SE) and foreign language fluency (FLU). Irrational thought (IRT) is linked to foreign language anxiety (FLA), and foreign language fluency (FLU). Foreign language anxiety (FLA) is linked to self-efficacy (SE) and foreign language fluency (FLU); and self-efficacy (SE) is linked to foreign language fluency (FLU). The results of the fifth structural equation model (SEM) was in Table 4.2.5.

Table 4.2.5: ***Structural Equation Model***

Structural Model			Unstd. Estimate	S.E.	C.R.	P	Std. Estimate
Irrational thought	<---	Mindfulness	0.092	0.034	2.666	0.008	0.113
Foreign Language Anxiety	<---	Irrational thought	2.955	0.163	18.113	***	0.927
Foreign Language Anxiety	<---	Mindfulness	-0.163	0.061	-2.689	0.007	-0.063
Self-Efficacy	<---	Foreign Language Anxiety	-0.340	0.021	-16.356	***	-0.521
Self-Efficacy	<---	Mindfulness	0.296	0.058	5.103	***	0.175
Foreign Language Fluency	<---	Foreign Language Anxiety	-0.434	0.080	-5.431	***	-0.626
Foreign Language Fluency	<---	Mindfulness	0.102	0.058	1.768	0.077	0.057
Foreign Language Fluency	<---	Self-Efficacy	0.594	0.035	16.838	***	0.558
Foreign Language Fluency	<---	Irrational thought	1.063	0.264	4.026	***	0.481

The measurement model of the SEM model 5, shown in Figure 4.2.9, indicated the relationship among the 5 variables. The 4 first-order variables, fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), and inferiority feeling

(IF), were positively related and can be used to explain the second-order variable - irrational thought (IRT), as in model 3 and 4.

Mindfulness (MIND) had a direct positive influence with irrational thought (IRT, Beta= .113), a direct negative influence on foreign language anxiety (FLA, Beta= -.063), and a direct influence on self-efficacy (SE, Beta=.175) and foreign language fluency (FLU, Beta=.057).

Mindfulness (MIND) also indirectly influence with foreign language anxiety (FLA) and foreign language fluency (FLU), mediated by irrational thought (IRT).

Irrational thought (IRT) had a direct influence on foreign language fluency (FLU, Beta=.481), and foreign language anxiety (FLA, Beta=.927); and also indirect influence on foreign language fluency (FLU) mediated by foreign language anxiety (FLA) and self-efficacy (SE).

Foreign language anxiety (FLA) had a strong negative direct influence on foreign language fluency (FLU, Beta= -.626) and self-efficacy (SE, Beta= -.521), and had an indirect negative influence on foreign language fluency (FLU) mediated by self-efficacy (SE).

Self-efficacy (SE) had a strong direct influence on foreign language fluency (FLU, Beta=.558).

The measurement model and structural model of the derived model 5 was shown in Figure 4.2.9 and 4.2.10.

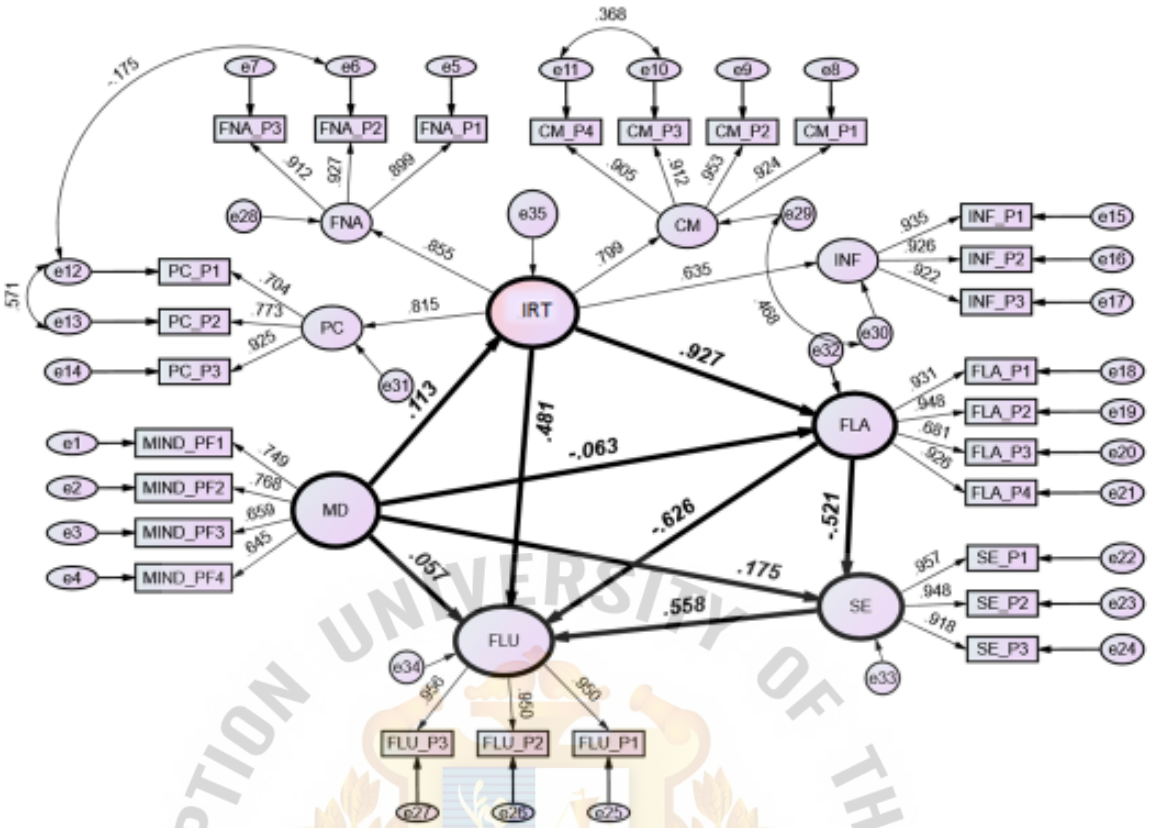

Figure 4.2.9: ***The measurement model of the SEM model 5***

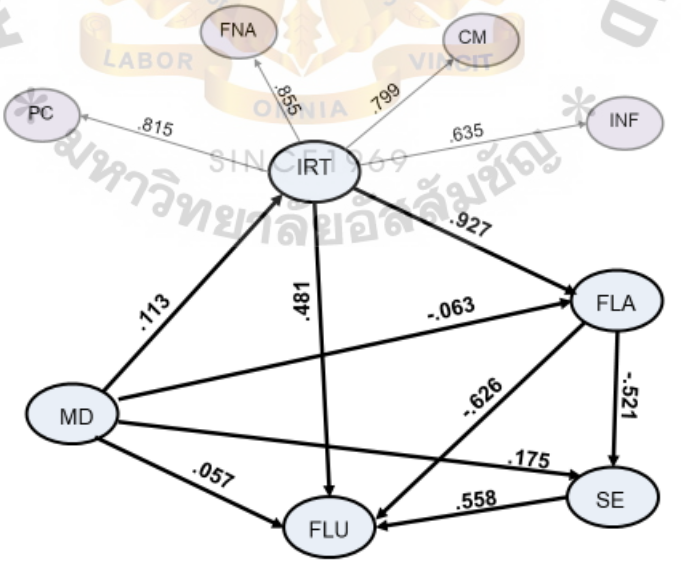

Figure 4.2.10: ***The structural model of the SEM model 5***

Evaluation of alternative models

The statistics used to evaluate the models are difference in model chi-square value ($\Delta\chi2$) and difference in CFI (ΔCFI). It is assumed that the models with smaller chi-square and greater the CFI, makes the model a better fit.

If P value of $\Delta\chi2$ is not significant (>0.05) then the compared model (first member of the pair) is no different from comparison model (second member of the pair) and hence assumption is correct. On the other hand, if p value is significant (<=0.05), then compared model is significantly different from comparison model, and suggest the possibility that both models could be correct. in which case, better fitting model (smaller chi-square and larger CFI) among the two could be selected. Theoretical consideration and conceptual rationality also guide the model selection.

Since all the 5 models, hypothesized model (M1), modified hypothesized model (M2) and SEM model (M3, M4, M5), revealed good fit indices. The five models would be compared to choose the model better fit the data. The comparative values of the Chi-squared test, RMSEA, GFI, CFI, TLI and PNFI in Table 4.2.6 were very similar.

Table 4.2.6: ***Comparison of nested models***

Model No	Model	$\chi2$	df	p	$\chi2$/df	GFI	CFI	TLI	PNFI
M1	Hy model 1 (All paths as in proposed model)	1277.573	304	0.000	4.203	0.896	0.960	0.954	0.821
M2	Hy model 2 (remove paths MIND-CM, INF)	1279.959	306	0.000	4.183	0.896	0.960	0.954	0.826

M3	Hy model 3 (with second-order construct)	1304.354	311	0.000	4.194	0.889	0.959	0.954	0.839
M4	Model 4 (First-order constructs, FNA, CM, PC and INF were linked by a second-order construct IRT; and MIND is linked to FLU)	1248.722	308	0.000	4.054	0.893	0.961	0.956	0.833
M5	Model 5 - Model 4 with MIND is linked to SE	1222.306	307	0.000	3.981	0.896	0.967	0.957	0.831

Model No	Model	RMSEA		
		Value	90% CI	Pclose
M1	Hy model 1 (All paths as in proposed model)	0.062	.059 - .066	0.000
M2	Hy model 2 (paths MIND-->CM and Path MIND --> IF removed	0.062	.058 - .065	0.000
M3	Hy model 3 (with second-order construct)	0.062	.058 - .065	0.000
M4	Model 4 (First- order constructs, FNA, CM, PC and	0.061	.057 - .064	0.000
M5	Model 5 - Model 4 with MIND is linked to SE	0.060	.056 - .063	0.000

Each model in turn was compared with the preceding models one at a time assuming the comparison model to be correct. From Table 4.2.6, when assuming M1 was correct, M2 did not differ from M1, while M3, M4, M5 significantly differed from M1. Among all these three, M5 had a better fit in terms of low Chi-square and better fit indices.

When assuming M2 was correct, M3, M4, M5 significantly differed from M2. Among all these three, M5 had a better fit in terms of reduced Chi-square and increase CFI.

When assuming M3 was correct, M4, M5 significantly differed from M3. Among all these two, M5 had a better fit in terms of reduced Chi-square and increase CFI.

And when assuming M4 was correct, M5 differed from M4, and was a better fitting model.

Therefore, SEM model (M5) is chosen as it was a better fitting model and conceptually simple and elegant.

Table 4.2.7: ***Comparison of nested models one at a time***

Models	Δχ2	Δdf	p	ΔCFI
M1 assumed correct				
M2 vs M1	2.386	2	0.303	0.000
M3 vs M1	28.851	7	0.000	-0.001
M4 vs M1	-28.851	4	0.000	0.001
M5 vs M1	-55.267	3	0.000	0.007
M2 assumed correct				
M3 vs M2	24.395	7	0.001	-0.001
M4 vs M2	-31.237	4	0.000	0.001
M5 vs M2	-57.653	3	0.000	0.007

M3 assumed correct				
M4 vs M3	-55.632	-3	0.000	0.002
M5 vs M3	-82.048	-4	0.000	0.008
M4 assumed correct				
M5 vs M4	-26.416	-1	0.000	0.006

Hypotheses Testing

In this study, there are 6 hypotheses aiming to explain direct and indirect effect between independent variable and dependent variable. The structural model 5 (Table 4.2.5) explained the relationship between independent variable and dependent variable.

H1: Mindfulness directly influences foreign language anxiety among Thai people.

The Table 4.2.5 has shown a significant direct negative relationship between mindfulness (MIND) and foreign language anxiety (FLA) (Beta = -0.063; p<0.007).

Therefore, H1: Mindfulness directly influences foreign language anxiety among Thai people, was supported. However, the effect size is relatively small.

H2: Mindfulness indirectly influences foreign language anxiety among Thai people by being mediated by irrational thoughts comprises of fear of non-achievement, concern over mistakes, perfectionistic cognitions, and interiority feeling.

Mindfulness (MIND) had a direct positive effect on irrational thought (IRT) (Beta=-0.113 p<0.008). and irrational thought (IRT) had a direct positive effect on foreign language anxiety (FLA) (Beta= 0.927; p<0.001). The result of confirmatory factory analysis (Table 4.1.20, page 146) the second-order latent factor model was chosen to have a better fit

to the data than the first-order latent factor model. The SEM model 5 (Figure 4.2.9, page 171) which was chosen to have the best fit to the data in this study, also confirmed that the second-order variable - irrational thought (IRT) better influenced foreign language anxiety (FLA) than the first-order variables – fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF).

Therefore H2: Mindfulness indirectly influences foreign language anxiety among Thai people by being mediated by irrational thoughts comprises of fear of non-achievement, concern over mistakes, perfectionistic cognitions, and interiority feeling was supported.

H3: Foreign language anxiety negatively affects self-efficacy.

The Table 4.2.5 has shown a significant direct negative relationship between foreign language anxiety (FLA) and self-efficacy (SE) (-0.521; $p<0.001$).

Therefore, H3: Foreign language anxiety negatively affects self-efficacy, was supported.

H4: Self-efficacy positively affects foreign language fluency.

The Table 4.2.5 has shown a significant direct negative relationship between foreign language anxiety (FLA) and self-efficacy (SE) (Beta= 0.558; $p<0.001$).

Therefore, H4: Self-efficacy positively affects foreign language fluency, was supported.

H5: The prediction model can explain the pattern of structural relationships hypothesized between mindfulness, irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency.

In order to test the hypothesis 5, the mediation effects were analyzed to explain the mechanism of the observed relationship between independent variable and a dependent variable via mediating variable.

A variable may be considered a mediator to the extent to which it carries the influence of a given independent variable to a given dependent variable. Therefore, a mediator accounts for the relationship between an independent variable and the dependent variable (Baron & Kenny, 1986).

The independent variable must predict the dependent variable, and the independent variable must predict the mediator. Mediation is tested through three regressions:

1. Independent variable predicting the dependent variable
2. Independent variable predicting the mediator
3. Independent variable and mediator predicting the dependent variable

The mediation effect is supported when independent variable is shown to significantly influence the dependent variable in the first regression equation (before mediation); independent variable is shown to significantly influence the mediator in the second regression equation (mediation effect); and, mediator must significantly influence the dependent variable in third equation (after mediation). Here, the independent variable and mediator are entered as predictors.

Complete mediation is present when the independent variable no longer influences the dependent variable after the mediator has been controlled and all of the above conditions are met. Partial mediation occurs when the independent variable's influence on the dependent variable is reduced after the mediator is controlled (Baron & Kenny, 1986).

The mediation effect of the model 5 were computed and presented in the Table 4.2.8.

Table 4.2.8: ***Mediation effect of Structural Equation Model (Model 5)***

Effect	Mediator(s)	Statistics	Before mediation	Mediation effect	After Mediation	Remarks
MD-->FLU	IRT	Coefficients	0.310	-0.081	0.391	Partial mediation
		p - value	*0.013**	*0.023**	*0.016**	
	FLA	Coefficients	0.311	-0.035	0.347	No Mediation
		p - value	*0.014**	*0.314*	*0.009***	
	SE	Coefficients	*0.312*	*0.182*	*0.130*	Partial mediation
		p - value	*0.012**	*0.014**	*0.019**	
	IRT & FLA	Coefficients	0.287	-0.067	0.353	Partial mediation
		p - value	*0.011**	*0.051**	*0.012**	
	FLA & SE	Coefficients	0.116	-0.020	0.136	No Mediation
		p - value	*0.099*	*0.397*	*0.015**	
	IRT & FLA & SE & FLU	Coefficients	0.090	-0.045	0.134	No mediation
		p - value	*0.183*	*0.085*	*0.016**	
IRT-->FLU	FLA	Coefficients	-0.815	-1.641	0.825	Partial mediation
		p - value	*0.032**	*0.010***	*0.011**	
IRT-->FLU	FLA & SE	Coefficients	*-0.915*	*-0.648*	*-0.268*	Partial mediation
		p - value	*0.023**	*0.010***	*0.011**	
FLA-->FLU	SE	Coefficients	-0.322	-0.200	-0.122	Partial Mediation
		p - value	*0.012**	*0.008***	*0.012**	

* Correlation is significant at the 0.05 level, ** Correlation is significant at the 0.01 level

When the co-efficient before mediation is significant and co-efficient after mediation is not significant, then it could be inferred that there is a full mediation; when both are significant, there is a partial mediation, and when both are not significant, there is no mediation.

MIND --> IRT --> FLU

The effect of mindfulness (MIND) on foreign language fluency (FLU) is partially mediated by irrational thought (IRT). The effect of mindfulness (MIND) on foreign language fluency (FLU), before mediation by irrational thought (IRT) is 0.310 (p=0.013) and after mediation, it increases to 0.391 (p=0.016) (Figure 4.2.11). The mediation effect of irrational thought (IRT) is negative (-0.081; p=0.023). Therefore, irrational thought (IRT) has lessen the negative effect of mindfulness (MIND) on foreign language fluency (FLU).

The positive effect of mindfulness (MIND) could help a person to be aware of his/her own irrational thought, and once a person realizes and be able to control his/her negative thought, his/her foreign language fluency increases. Moreover, mindfulness (MIND) also had a direct positive influence on foreign language fluency. Therefore, mindfulness influences the mediation effect of IRT on FLU. In other word, mindfulness (MIND) helps a person to be aware of his/her irrational thought (IRT), thus, improve his/her foreign language fluency (FLU).

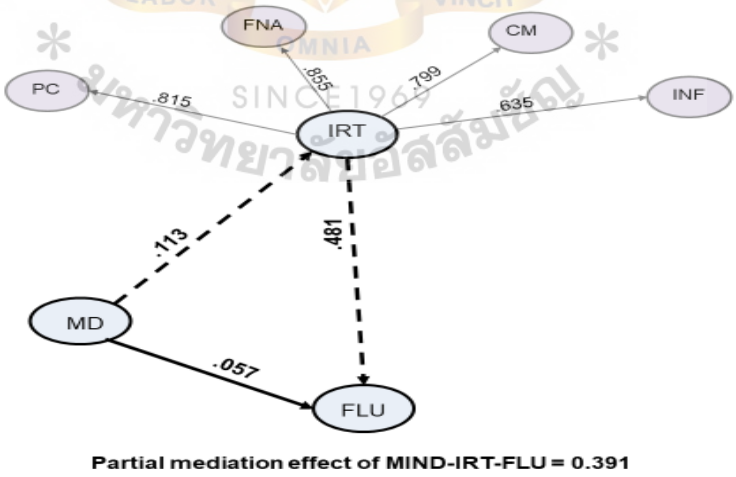

Figure 4.2.11: ***The mediation effect MIND-IRT-FLU in structural model 5 (M5)***

MIND --> FLA --> FLU

Foreign language anxiety (FLA) has not mediated the effect of mindfulness (MIND) on foreign language fluency (FLU) (-0.035; p=0.314). The change in the effect of mindfulness (MIND) on foreign language fluency (FLU), before mediation by FLA (0.311; p=0.014) and after mediation by FLA (0.347; p=0.009) is not statistically significant. Foreign language anxiety (FLA) as such does not play any role in influencing the effect of mindfulness (MIND) on foreign language fluency (FLU).

MIND --> SE --> FLU

Self-efficacy (SE) has partially mediated the effect of mindfulness (MIND) on foreign language fluency (FLU) (0.182; p=0.014). The change in the effect of mindfulness (MIND) on foreign language fluency (FLU), before mediation by SE (0.312; p=0.012) and after mediation by SE (0.130; p=0.019) is statistically significant (Figure 4.2.12). In other word, the positive effect of mindfulness (MIND) on foreign language fluency (FLU) is in a greater part contributed by Self-efficacy (SE).

Although mindfulness (MIND) and self-efficacy (SE) has a direct influence on foreign language fluency (FLU), at the same time, mindfulness also impacts a person's perception on his/her own ability to perform (foreign language communication) which leads to a higher confidence to communicate in a foreign language more fluently.

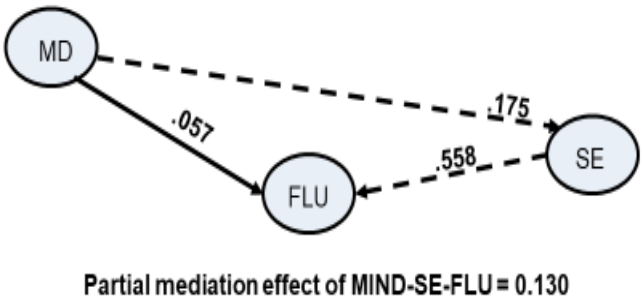

Figure 4.2.12: ***The mediation effect MIND-SE-FLU in structural model 5 (M5)***

MIND --> IRT-->FLA-->FLU

Both irrational thought (IRT) and foreign language anxiety (FLA) partially mediated the effect of mindfulness (MIND) on foreign language fluency (FLU) (-0.067; p=0.051). The change in the effect of MIND on FLU before (0.287; p=0.011) and after (0.353; p=0.012) mediated by IRT & FLA together is statistically significant (Figure 4.2.13). The positive effect of mindfulness (MIND) on foreign language fluency (FLU) is enhanced by irrational thought (IRT) and foreign language anxiety (FLA). Although higher foreign language anxiety (FLA) could lead to lower foreign language fluency (FLU), mindfulness could help a person to be aware of his/her own irrational thought, and once a person realizes and be able to control his/her negative thought, his/her foreign language anxiety reduces and increase foreign language fluency. Moreover, mindfulness (MIND) also had a direct positive influence on foreign language fluency. Therefore, mindfulness influences the mediation effect of IRT and FLA on FLU. In other word, mindfulness (MIND) helps a person to be aware of his/her irrational thought (IRT) and foreign language anxiety (FLA), thus, improve his/her foreign language fluency (FLU).

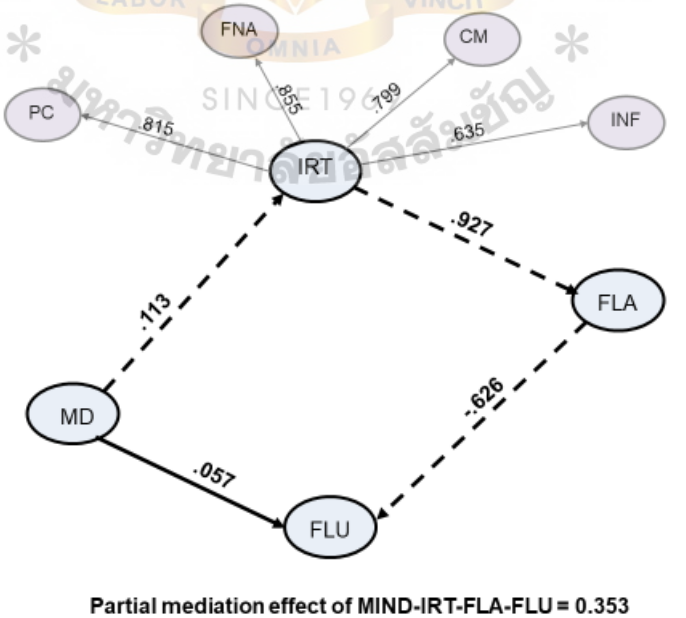

Figure 4.2.13: ***The mediation effect MIND-IRT-FLA-FLU in structural model 5 (M5)***

MIND --> FLA-->SE-->FLU

Foreign language anxiety (FLA) and self-efficacy (SE) has not mediated the effect of mindfulness (MIND) on foreign language fluency (FLU) (-0.020; p=0.397). The change in the effect of mindfulness (MIND) on foreign language fluency (FLU), before mediation by FLA and SE (0.116; p=0.099) and after mediation by FLA and SE (0.136; p=0.015) is not statistically significant. Foreign language anxiety (FLA) and self-efficacy (SE) do not play any role in influencing the effect of mindfulness (MIND) on foreign language fluency (FLU).

MIND--> IRT --> FLA -->SE-->FLU

Irrational thought (IRT), foreign language anxiety (FLA) and self-efficacy (SE) have not mediated the effect of mindfulness (MIND) on foreign language fluency (FLU) (-0.045; p=0.085). The change in the effect of mindfulness (MIND) on foreign language fluency (FLU), before mediation by IRT, FLA and SE (0.090; p=0.183) and after mediation by IRT, FLA and SE (0.134; p=0.016) is not statistically significant. Irrational thought (IRT), foreign language anxiety (FLA) and self-efficacy (SE) do not play any role in influencing the effect of mindfulness (MIND) on foreign language fluency (FLU).

IRT --> FLA --> FLU

Foreign language anxiety (FLA) has partially mediated the effect of irrational thought (IRT) on foreign language fluency (FLU) (-1.641; p=0.010). The change in the effect of irrational thought (IRT) on foreign language fluency (FLU), before mediation by FLA (-0.815; p=0.032) and after mediation by FLA (0.825; p=0.011) is statistically significant (Figure 4.2.14). In other word, the negative effect of irrational thought (IRT) on foreign language fluency (FLU) is in a greater part contributed by foreign language anxiety (FLA).

The 4 components of irrational thought, perfectionistic cognition (PC), fear of non-achievement (FNA), concern for mistake (CM) and inferiority feeling (INF), could have a positive influence on foreign language fluency in a way that a person, who is aware of his/her irrational thought and foreign language anxiety, does not want to make mistake or look bad to others, will try to perform his best on foreign language communication, thus, reduces his anxiety and increases his foreign language fluency.

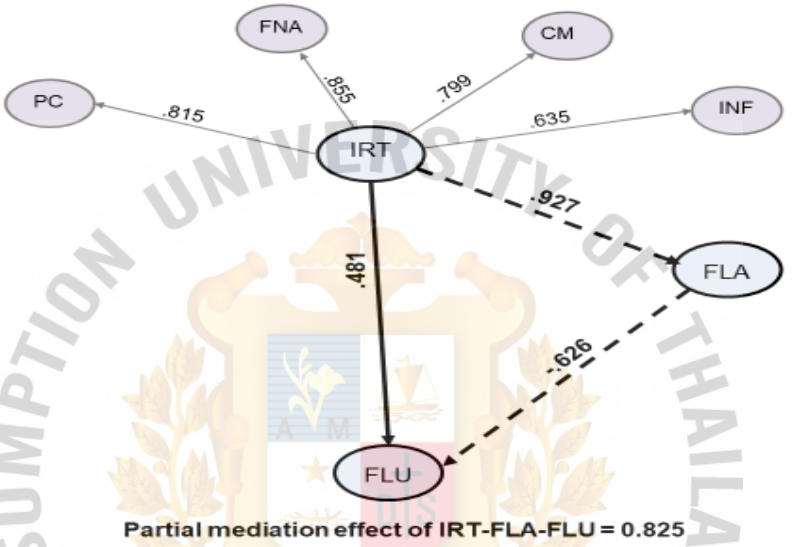

Figure 4.2.14: ***The mediation effect IRT-FLA-FLU in structural model 5 (M5)***

IRT --> FLA --> SE --> FLU

Foreign language anxiety (FLA) and self-efficacy (SE) have partially mediated the effect of irrational thought (IRT) on foreign language fluency (FLU) (-0.648; p=0.010). The change in the effect of irrational thought (IRT) on foreign language fluency (FLU), before mediation by FLA and SE (-0.915; p=0.023) and after mediation by FLA and SE (-0.268; p=0.011) is statistically significant (Figure 4.2.15). In other word, the negative effect of irrational thought (IRT) on foreign language fluency (FLU) is in a greater part contributed by foreign language anxiety (FLA) and self-efficacy (SE).

As mentioned earlier that irrational thought (IRT) could have a positive influence on foreign language fluency in a way that a person, who is aware of his/her irrational thought and foreign language anxiety (FLA), does not want to make mistake or make a fool in front of others, will try to perform his best on foreign language communication, thus, reduces his anxiety, be confident on his ability to communicate in a foreign language (SE), thus, increases his foreign language fluency (FLU).

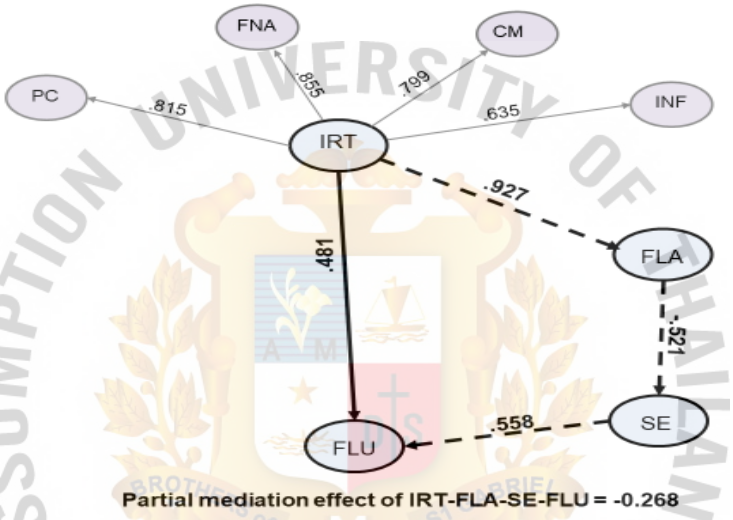

Figure 4.2.15: ***The mediation effect IRT-FLA-SE-FLU in structural model 5 (M5)***

FLA --> SE --> FLU

Self-efficacy (SE) has partially mediated the effect of foreign language anxiety (FLA) on foreign language fluency (FLU) (-0.200; p=0.008). The change in the effect of foreign language anxiety (FLA) on foreign language fluency (FLU), before mediation by SE (-0.322; p=0.012) and after mediation by SE (-0.122; p=0.012) is statistically significant (Figure 4.2.16). In other word, the negative effect of foreign language anxiety (FLA) on foreign language fluency (FLU) is in a greater part contributed by self-efficacy (SE).

A direct influence foreign language anxiety (FLA) results in low foreign language fluency (FLU) and low self- efficacy (SE). Although, a person who believes in his foreign language skill (SE), can perform well (FLU), an anxiety (FLA) could reduce his confidence (SE) and leads to a lower his fluency (FLU).

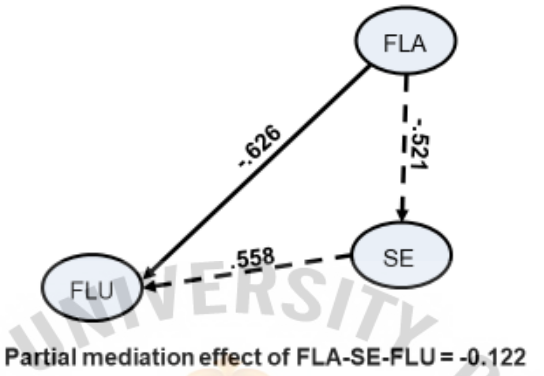

Figure 4.2.16: ***The mediation effect FLA-SE-FLU in structural model 5 (M5)***

From the above discussion, the prediction model (SEM 5) confirmed that all variables had some direct and indirect effect on foreign language fluency (FLU)

Therefore, H5: The prediction model can explain the pattern of structural relationships hypothesized between mindfulness, irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency, was supported.

The summary of hypotheses (1, 2, 3, 4, 5) testing are shown in Table 4.2.9.

Table 4.2.9: ***Summary of Hypotheses Testing***

Hypotheses	Proposed	Result
H1: Mindfulness directly influences foreign language anxiety among Thai people.	Directly influence	Supported with small effect size
H2: Mindfulness indirectly influences foreign language anxiety among Thai people by being mediated by irrational thoughts which comprises of fear of non-achievement, concern over mistakes, perfectionistic cognitions, and interiority feeling).	Indirectly influence	Supported with small effect size
H3: Foreign language anxiety negatively affects self-efficacy.	Negatively influence	Supported
H4: Self-efficacy positively affects foreign language fluency.	Positively influence	Supported
H5: The prediction model can explain the pattern of structural relationships hypothesized between mindfulness, irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency.	Predictively explain relationship	Supported
H6: Mindfulness-based intervention effectively reduces the participants' levels of foreign language anxiety and increase foreign language fluency.	Effectively reduce FLA and increase FLU	Not supported (to be discussed in Study III)

Study III (Experiment)

Overview Results of Study III

Study III examines the effectiveness of a researcher-developed mindfulness intervention in influencing the factors of mindfulness, irrational thoughts (fear of non-achievement, concern over mistakes, perfectionistic cognition, inferiority feeling), foreign language anxiety, self-efficacy, and foreign language fluency. A 2x3 repeated measure ANOVA one between subjects factor and one within subjects factor was used to determine the effect of intervention. The first independent variable is a 2-levels between subject variable (experiment 1 and experiment 2 groups), and the second independent variable is a 3-levels with-in subject variable (Pre-test, Post-test 1 and Post-test 2 conditions).

Participants

A sample of 98 participants (male: n=19, 19.39%; female: n=79, 80.61%), including 10 students from Kru Kate English School, Bangkok, 35 students from Silpakorn University, Nakorn Pathom, 34 staff of the Office of Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment, and 19 staff from Bangchak Corporation PCL. – Head Quarter, were employed for Study III. Of the 98 participants, 51 were randomly assigned to the experiment 1 group (no intervention on day 1-7 and intervention on day 8-15) (male: n=11, 11.22%; female: n=40, 40.82%; student: n=18, 18.37%; employee: n=30, 30.61%; self-employed: n=3, 3.06%), and 47 were randomly assigned to the experiment 2 group (male: n=8, 8.16%; female: n=39, 39.80%; student: n=18, 18.37%; employee: n=25, 25.51%; business owner: n=4, 4.08%).

The age of the 51 participants in the experiment 1 group fell into five ranges, 18-23 years old (n=18, 18.37%), 24-35 years old (n=20, 20.41%), 36-45 years old (n=8,

8.16%), 46-55 years old (n=4, 4.04%), 55 years old and above (n=1, 1.02%).

The age of the 47 participants in the experiment 2 group fell into five ranges, 18-23 years old (n=19, 19.39%), 24-35 years old (n=8, 8.16%), 36-45 years old (n=12, 12.24%), 46-55 years old (n=7, 7.149%), 55 years old and above (n=1, 1.02%).

All participants of both groups speak Thai as their native language and speak English as their foreign language.

The 51 subjects in the experiment 1 group had meditation practice; never (n=12, 12.24%), a few times a year (n= 29, 29.59%), a few times a month (n= 7, 7.14%), a few times a week (n= 2, 2.04%), and every day (n= 1, 1.02%). The 47 subjects in the experiment 2 group had various meditation practice experiences; never (n=11, 11.22%), a few times a year (n= 26, 26.53%), a few times a month (n= 7, 7.14%), a few times a week (n= 2, 2.04%), and every day (n= 1, 1.02%).

The Chi-square values of each biographical data which compare subject samples in the experiment 1 group and the experiment 2 group, with $p > .05$ indicate that there is no difference between subject samples of the two groups. The summary of biographical data of the experimental subjects were shown in Table 4.3.1.

Table 4.3.1: ***Biographical Data of Experimental Subjects***

Total Subjects = 98			G1=51	%	G2=47	%	$\chi 2$	p
1	Sex	Male	11	11.22	8	8.16	0.324	0.617
		Female	40	40.82	39	39.80		
2	Age	18-23	18	18.37	19	19.39	6.847	0.120
		24-35	20	20.41	8	8.16		
		36-45	8	8.16	12	12.24		
		46-55	4	4.08	7	7.14		
		56 and above	1	1.02	1	1.02		

3	Occupation	Students	18	18.37	18	18.37	6.624	0.060
		Employees	30	30.61	25	25.51		
		Business Owners	0	0.00	4	4.08		
		Self-employed	3	3.06	0	0.00		
		Unemployed	0	0.00	0	0.00		
4	Marital Status	Single	43	43.88	34	34.69	2.937	0.440
		Married	7	7.14	11	11.22		
		Divorced/Separated	1	1.02	1	1.02		
		Widowed	0	0.00	1	1.02		
5	Birth Rank in	Only child	10	10.20	8	8.16	4.742	0.189
	Family	Eldest Child	14	14.29	20	20.41		
		Middle Child	8	8.16	2	2.04		
		Youngest Child	19	19.39	17	17.35		
		Adopted Child	0	0.00	0	0.00		
6	Educational	High School Diploma	0	0.00	0	0.00	3.738	0.181
	Level	Vocational Certificate	1	1.02	0	0.00		
		Bachelor's Degree	36	36.73	27	27.55		
		Master's Degree	14	14.29	19	19.39		
		Doctorate Degree	0	0.00	1	1.02		
7	Monthly	Less than 20,000 Baht	28	28.57	22	22.45	3.837	0.291
	Income	20,001- 35,000 Baht	14	14.29	9	9.18		
		35,001– 50,000 Baht	5	5.10	7	7.14		
		50,001 Baht and above	4	4.08	9	9.18		
8	First language	Thai	51	52.04	47	47.96	0.000	1.000
		Chinese	0	0.00	0	0.00		

		Others	0	0.00	0	0.00		
9	Foreign	English	50	51.02	46	46.94	1.876	0.732
	language	Chinese	0	0.00	1	1.02		
		Others	1	1.02	0	0.00		
10	Religion	Buddhism	50	51.02	44	44.90	1.567	0.181
		Christianity	1	1.02	2	2.04		
		Islam	0	0.00	1	1.02		
		Hindu	0	0.00	0	0.00		
		Others	0	0.00	0	0.00		
		None	0	0.00	0	0.00		
11	Meditation	Never	12	12.24	11	11.22	3.837	0.291
	Practices	A few times a year	29	29.59	26	26.53		
		A few times a month	7	7.14	7	7.14		
		A few times a week	2	2.04	2	2.04		
		Everyday	1	1.02	1	1.02		

Analysis strategy

To discover the effect of mindfulness intervention, the above intervention scheme was followed. Subjects were assigned randomly to two groups, experiment 1 (n=51) and experiment 2 (n=47) groups. As shown in table 4.3.1, the chi-square test performed across groups in each demographic variable is non-significant suggesting equality of groups in all major demographic variables. The analytical rationale is based on the interaction effect between Time and Groups (Time*Groups). The mindfulness scores between pre and post1 time periods, should show significant increase for experimental group than control group, and between post 1 and post 2 time periods should show significant increase for both the groups.

Other two main effects of Time and Groups are of no interest as they do not help in examining the effect of intervention. Changes in time main effect, if any, suggest the effect of elapsed time irrespective of differential treatment of groups, and changes in group main effect suggest difference in groups irrespective of intervention. Hence in study III, only interaction effect is presented and discussed. A 2x3 factorial ANOVA for repeated measures in second independent variable has been used to examine intervention effects.

Hypotheses for Mindfulness Intervention

In order to test H6: Mindfulness-based intervention effectively reduces the participants' levels of foreign language anxiety and increase foreign language fluency, the following statistical hypotheses were stated.

1a). There will not be any significant increase in mindfulness scores between experiment 1 and experiment 2 groups.

1b). There will not be any significant increase in mindfulness scores across pre, post1 and post2 time periods.

1c). There will not be any significant interaction in mindfulness scores between groups and time periods.

2a). There will not be any significant decrease in fear of non-achievement scores between experiment 1 and experiment 2 groups.

2b). There will not be any significant decrease in fear of non-achievement scores across pre, post1 and post2 time periods.

2c). There will not be any significant interaction in fear of non-achievement scores between groups and time periods.

3a). There will not be any significant decrease in concern for mistakes scores between experiment 1 and experiment 2 groups.

3b). There will not be any significant decrease in concern for mistakes scores across pre, post1 and post2 time periods.

3c). There will not be any significant interaction in concern for mistakes scores between groups and time periods.

4a). There will not be any significant decrease in perfectionistic cognition scores between experiment 1 and experiment 2 groups.

4b). There will not be any significant decrease in perfectionistic cognition scores across pre, post1 and post2 time periods.

4c). There will not be any significant interaction in perfectionistic cognition scores between groups and time periods.

5a). There will not be any significant decrease in inferiority feeling scores between experiment 1 and experiment 2 groups.

5b). There will not be any significant decrease in inferiority feeling scores across pre, post1 and post2 time periods.

5c). There will not be any significant interaction in inferiority feeling scores between groups and time periods.

6a). There will not be any significant decrease in foreign language anxiety scores between experiment 1 and experiment 2 groups.

6b). There will not be any significant decrease in foreign language anxiety scores across pre, post1 and post2 time periods.

6c). There will not be any significant interaction in foreign language anxiety scores between groups and time periods.

7a). There will not be any significant increase in self-efficacy scores between experiment 1 and experiment 2 groups.

7b). There will not be any significant increase in self-efficacy scores across pre, post1 and post2 time periods.

7c). There will not be any significant interaction in self-efficacy scores between groups and time periods.

8a). There will not be any significant increase in foreign language fluency scores between experiment 1 and experiment 2 groups.

8b). There will not be any significant increase in foreign language fluency scores across pre, post1 and post2 time periods.

8c). There will not be any significant interaction in foreign language fluency scores between groups and time periods.

Effect of intervention on Mindfulness

Table 4.3.2 presents the means and standard deviations of mindfulness scores for pre, post1 and post2 time periods for both experiment 1 and experiment 2 groups. The post-test 1 mean scores of the experiment 1 group who received no intervention, was slightly higher than the pre-test scores. This might be that the participants were familiar with the instrument or get bored or tired of the repeatedly tested questionnaires.

Table 4.3.2: ***Means and Standard Deviation for Mindfulness***

Experimental Conditions		Mean	Std. Deviation	N
Pre	Experiment 1	70.66667	6.967544	51
	Experiment 2	70.53191	7.406962	47
	Total	70.60204	7.144661	98

Post1	Experiment 1	71.60784	8.219680	51
	Experiment 2	71.27660	11.197248	47
	Total	71.44898	9.711426	98
Post 2	Experiment 1	74.54902	9.726898	51
	Experiment 2	75.25532	10.923585	47
	Total	74.88776	10.270449	98

The perusal of mean table suggests some changes in means in the expected direction, but the 2x3 Repeated measures ANOVA table shows otherwise. Changes in mean scores are statistically not significant. Table 4.3.3 presents the summary of ANOVA results. Among two main effects, the between-subject main effect, the difference between experiment 1 and experiment 2 groups is not statistically significant ($F_{(1,96)} = 0.0027$; $p = 0.958$). Hypothesis 1a is not rejected. The with-in subject main effect of differences across pre, post1 and post2 time periods is statistically significant ($F_{(2,192)} = 12.3422$; $p = 0.000$). Hypothesis 1b is rejected. Perusal of mean scores show progressive increase from pre to post1 and post2. But this increase cannot be attributed exclusively to intervention because the group x time interaction effect is not significant ($F_{(2,192)} = 0.1802$; $p = 0.835$). Hypothesis 1c is not rejected.

Table 4.3.3: ***A 2x3 Repeated measure ANOVA for Mindfulness***

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Between subjects	***16403.2***	***97***	169.1053		
Groups	0.471	1	0.471	0.00276	0.958
Subjects within Groups	16402.74	96	170.8619		

Within Subject	***8945.67***	***196***	45.6412		
Time	1017.39	2	508.695	12.3422	0.000
Groups x Time	14.859	2	7.4295	0.18026	0.835
Time x Subject within groups	7913.42	192	41.2157		

Effect of intervention on Fear of non-achievement

Table 4.3.4 presents the means and standard deviations of fear of non-achievement scores for pre, post1 and post2 time periods for both experimental and control groups.

Table 4.3.4: ***Means and Standard Deviation for Fear of Non-achievement***

Experimental Conditions		Mean	Std. Deviation	N
Pre	Experiment 1	28.29412	6.658210	51
	Experiment 2	28.74468	6.315846	47
	Total	28.51020	6.466798	98
Post1	Experiment 1	25.45098	7.545366	51
	Experiment 2	25.51064	8.454153	47
	Total	25.47959	7.952474	98
Post 2	Experiment 1	22.23529	8.058755	51
	Experiment 2	23.25532	9.061308	47
	Total	22.72449	8.525015	98

The perusal of mean table suggests some changes in means in the expected direction, but the 2x3 Repeated measures ANOVA table shows otherwise. Changes in mean

scores are statistically not significant. Table 4.3.5 presents the summary of ANOVA results. Among two main effects, the between-subject main effect, the difference between experiment 1 and experiment 2 groups is not statistically significant ($F_{(1,96)} = 0.1275$; $p = 0.722$). Hypothesis 2a is not rejected. The with-in subject main effect of differences across pre, post1 and post2 time periods is statistically significant ($F_{(2,192)} = 55.368$; $p = 0.000$). Hypothesis 2b is rejected. Perusal of mean scores show progressive decrease from pre to post1 and post2. But this decrease cannot be attributed exclusively to intervention because the group x time interaction effect is not significant ($F_{(2,192)} = 0.3870$; $p = 0.680$). Hypothesis 2c is not rejected.

Table 4.3.5: ***A 2x3 Repeated measure ANOVA for Fear of non-achievement***

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Between subjects	***14398.7***	***97***	148.4399		
Groups	19.092	1	19.092	0.127461	0.722
Subjects within Groups	14379.58	96	149.7872		
Within Subject	***4474.29***	***196***	22.82799		
Time	1632.443	2	816.2215	55.36767	0.000
Groups x Time	11.409	2	5.7045	0.38696	0.680
Time x Subject within groups	2830.434	192	14.74184		

Effect of intervention on Concern for mistakes

Table 4.3.6 presents the means and standard deviations of concern for mistakes scores for pre, post1 and post2 time periods for both experimental and control groups.

Table 4.3.6: ***Means and Standard Deviation for Concern for mistakes***

Experimental Conditions		Mean	Std. Deviation	N
Pre	Experiment 1	40.17647	14.174210	51
	Experiment 2	39.27660	12.607282	47
	Total	39.74490	13.384336	98
Post1	Experiment 1	36.70588	14.566117	51
	Experiment 2	36.78723	13.236866	47
	Total	36.74490	13.872996	98
Post 2	Experiment 1	32.68627	14.402070	51
	Experiment 2	33.38298	13.196760	47
	Total	33.02041	13.770564	98

The perusal of mean table suggests some changes in means in the expected direction, but the 2x3 Repeated measures ANOVA table shows otherwise. Changes in mean scores are statistically not significant. Table 4.3.7 presents the summary of ANOVA results. Among two main effects, the between-subject main effect, the difference between experiment 1 and experiment 2 groups is not statistically significant ($F_{(1,96)} = 0.0002$; $p = 0.988$). Hypothesis 3a is not rejected. The with-in subject main effect of differences across pre, post1 and post2 time periods is statistically significant ($F_{(2,192)} = 37.0726$; $p = 0.000$). Hypothesis 3b is rejected. Perusal of mean scores show progressive decrease from pre to post1 and post2. But this decrease cannot be attributed exclusively to intervention because the group x time interaction effect is not significant ($F_{(2,192)} = 0.5347$; $p = 0.587$). Hypothesis 3c is not rejected.

Table 4.3.7: ***A 2x3 Repeated measure ANOVA for Concern for mistakes***

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Between subjects	***48712.2***	***97***	502.1872		
Groups	0.121	1	0.121	0.000238	0.988
Subjects within Groups	48712.04	96	507.4171		
Within Subject	***7926.42***	***196***	40.44092		
Time	2199.38	2	1099.69	37.07262	0.000
Groups x Time	31.72	2	15.86	0.53467	0.587
Time x Subject within groups	5695.321	192	29.66313		

Effect of intervention on Perfectionistic cognition

Table 4.3.8 presents the means and standard deviations of perfectionistic cognition scores for pre, post1 and post2 time periods for both experimental and control groups.

Table 4.3.8: ***Means and Standard Deviation for Perfectionistic Cognition***

Experimental Conditions		Mean	Std. Deviation	N
Pre	Experiment 1	30.25490	7.386049	51
	Experiment 2	28.02128	5.877331	47
	Total	29.18367	6.764594	98
Post1	Experiment 1	30.05882	6.447982	51
	Experiment 2	26.61702	7.029606	47
	Total	28.40816	6.917536	98
Post 2	Experiment 1	28.74510	7.328965	51

Experiment 2	26.31915	6.359199	47
Total	27.58163	6.953340	98

Table 4.3.9 presents the summary of the 2x3 repeated measures ANOVA for perfectionistic cognition. Although Table 4.3.8 suggests some changes in means in the expected direction, the important groups x time within subject effect is not significant.

Among two main effects, the between-subject main effect, the difference between experiment 1 and experiment 2 groups is statistically significant ($F_{(1,96)} = 4.5718$; $p = 0.035$). Hypothesis 4a is rejected. The with-in subject main effect of differences across pre, post1 and post2 time periods is statistically significant ($F_{(2,192)} = 6.1126$; $p = 0.003$). Hypothesis 4b is rejected. Although, there are significant decrease in perfectionistic cognition scores within and between the two groups, the perusal of mean scores show progressive increase from pre to post1 and post2. Therefore, this decrease cannot be attributed exclusively to intervention because the group x time interaction effect is not significant ($F_{(2,192)} = 1.0005$; $p = 0.370$). Hypothesis 4c is not rejected.

Table 4.3.9: ***A 2x3 Repeated measure ANOVA for Perfectionistic Cognition***

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Between subjects	***11771.4***	***97***	121.3541		
Groups	535.104	1	535.104	4.57181	0.035
Subjects within Groups	11236.25	96	117.0442		
Within Subject	***2125.03***	***196***	10.84199		
Time	126.167	2	63.0835	6.122605	0.003
Groups x Time	20.616	2	10.308	1.000449	0.370
Time x Subject within groups	1978.248	192	10.30338		

Effect of intervention on Inferiority feeling

Table 4.3.10 presents the means and standard deviations of inferiority feeling scores for pre, post1 and post2 time periods for both experimental and control groups.

Table 4.3.10: ***Means and Standard Deviation for Inferiority Feeling***

Experimental Conditions		Mean	Std. Deviation	N
Pre	Experiment 1	13.07843	6.716675	51
	Experiment 2	13.40426	5.515431	47
	Total	13.23469	6.140622	98
Post1	Experiment 1	13.47059	7.178727	51
	Experiment 2	13.51064	6.237587	47
	Total	13.48980	6.709349	98
Post 2	Experiment 1	12.37255	6.951146	51
	Experiment 2	13.02128	5.990897	47
	Total	12.68367	6.483281	98

The perusal of mean table suggests some changes in means in the expected direction, but the 2x3 Repeated measures ANOVA table shows otherwise. Changes in mean scores are statistically not significant. Table 4.3.11 presents the summary of ANOVA results. Among two main effects, the between-subject main effect, the difference between experiment 1 and experiment 2 groups is not statistically significant ($F_{(1,96)} = 0.0789$; $p = 0.779$). Hypothesis 5a is not rejected. The with-in subject main effect of differences across pre, post1 and post2 time periods is statistically significant ($F_{(2,192)} = 1.6542$; $p = 0.194$). Hypothesis 5b is not rejected. Perusal of mean scores show slight decrease from pre to post1 and post2. But this decrease cannot be attributed exclusively to intervention because the group x time

interaction effect is not significant ($F_{(2,192)} = 0.2328$; $p = 0.793$). Hypothesis 5c is not rejected.

Table 4.3.11: ***A 2x3 Repeated measure ANOVA for Inferiority Feeling***

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Between subjects	***10225.9***	***97***	105.4216		
Groups	8.393	1	8.393	0.078858	0.779
Subjects within Groups	10217.5	96	106.4323		
Within Subject	***1907.63***	***196***	9.732816		
Time	32.237	2	16.1185	1.654189	0.194
Groups x Time	4.537	2	2.2685	0.232809	0.793
Time x Subject within groups	1870.858	192	9.744052		

Effect of intervention on Foreign language anxiety

Table 4.3.12 presents the means and standard deviations of foreign language anxiety scores for pre, post1 and post2 time periods for both experimental and control groups.

Table 4.3.12: ***Means and Standard Deviation for Foreign Language Anxiety***

Experimental Conditions		Mean	Std. Deviation	N
Pre	Experiment 1	89.68627	16.575271	51
	Experiment 2	87.00000	19.989127	47
	Total	88.39796	18.246163	98
Post1	Experiment 1	87.19608	17.536271	51
	Experiment 2	81.78723	23.066008	47

	Total	84.60204	20.449959	98
Post 2	Experiment 1	79.13725	18.523520	51
	Experiment 2	79.72340	23.206729	47
	Total	79.41837	20.793002	98

The perusal of mean table suggests some changes in means in the expected direction, but the 2x3 Repeated measures ANOVA table shows otherwise. Changes in mean scores are statistically not significant. Table 4.3.13 presents the summary of ANOVA results. Among two main effects, the between-subject main effect, the difference between experiment 1 and experiment 2 groups is not statistically significant ($F_{(1,96)} = 0.45482$; $p = 0.502$). Hypothesis 6a is not rejected. The with-in subject main effect of differences across pre, post1 and post2 time periods is statistically significant ($F_{(2,192)} = 22.2553$; $p = 0.000$). Hypothesis 6b is rejected. Perusal of mean scores show progressive decrease from pre to post1 and post2. But this decrease cannot be attributed exclusively to intervention because the group x time interaction effect is not significant ($F_{(2,192)} = 2.5089$; $p = 0.084$). Hypothesis 6c is not rejected.

Table 4.3.13: ***A 2x3 Repeated measure ANOVA for Foreign Language Anxiety***

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Between subjects	***97490.6***	***97***	1005.058		
Groups	459.707	1	459.707	0.454823	0.502
Subjects within Groups	97030.91	96	1010.739		
Within Subject	***21216***	***196***	108.2451		
Time	3909.852	2	1954.926	22.25534	0.000

Groups x Time	440.763	2	220.3815	2.508875	0.084
Time x Subject within groups	16865.43	192	87.84077		

Effect of intervention on Self-efficacy

Table 4.3.14 presents the means and standard deviations of self-efficacy scores for pre, post1 and post2 time periods for both experimental and control groups.

Table 4.3.14: ***Means and Standard Deviation for Self-efficacy***

Experimental Conditions		Mean	Std. Deviation	N
Pre	Experiment 1	32.74510	6.405757	51
	Experiment 2	32.55319	9.422011	47
	Total	32.65306	7.953605	98
Post1	Experiment 1	34.09804	6.428857	51
	Experiment 2	34.38298	8.596140	47
	Total	34.23469	7.507798	98
Post 2	Experiment 1	35.33333	7.254424	51
	Experiment 2	35.31915	10.166241	47
	Total	35.32653	8.725807	98

The perusal of mean table suggests some changes in means in the expected direction, but the 2x3 Repeated measures ANOVA table shows otherwise. Changes in mean scores are statistically not significant. Table 4.3.15 presents the summary of ANOVA results. Among two main effects, the between-subject main effect, the difference between experiment 1 and experiment 2 groups is not statistically significant ($F_{(1,96)} = 0.0003$; $p = 0.986$).

Hypothesis 7a is not rejected. The with-in subject main effect of differences across pre, post1 and post2 time periods is statistically significant ($F_{(2,192)} = 8.5007$; $p = 0.000$). Hypothesis 7b is rejected. Perusal of mean scores show progressive increase from pre to post1 and post2. But this increase cannot be attributed exclusively to intervention because the group x time interaction effect is not significant ($F_{(2,192)} = 0.0681$; $p = 0.934$). Hypothesis 7c is not rejected.

Table 4.3.15: ***A 2x3 Repeated measure ANOVA for Self-efficacy***

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Between subjects	***14980.2***	***97***	154.4347		
Groups	0.051	1	0.051	0.000327	0.986
Subjects within Groups	14980.12	96	156.0429		
Within Subject	***4363.95***	***196***	22.26505		
Time	354.759	2	177.3795	8.500721	0.000
Groups x Time	2.841	2	1.4205	0.068076	0.934
Time x Subject within groups	4006.35	192	20.86641		

Effect of intervention on Foreign language fluency

Table 4.3.16 presents the means and standard deviations of foreign language fluency scores for pre, post1 and post2 time periods for both experimental and control groups.

Table 4.3.16: ***Means and Standard Deviation for Foreign language fluency***

Experimental Conditions		Mean	Std. Deviation	N
Pre	Experiment 1	23.23529	8.803609	51
	Experiment 2	23.70213	9.762205	47
	Total	23.45918	9.230349	98
Post1	Experiment 1	25.54902	9.753592	51
	Experiment 2	25.31915	9.735874	47
	Total	25.43878	9.695430	98
Post 2	Experiment 1	27.56863	10.352304	51
	Experiment 2	27.02128	9.599568	47
	Total	27.30612	9.950815	98

The perusal of mean table suggests some changes in means in the expected direction, but the 2x3 Repeated measures ANOVA table shows otherwise. Changes in mean scores are statistically not significant. Table 4.3.17 presents the summary of ANOVA results. Among two main effects, the between-subject main effect, the difference between experiment 1 and experiment 2 groups is not statistically significant ($F_{(1,96)} = 0.0032$; $p = 0.955$). Hypothesis 8a is not rejected. The with-in subject main effect of differences across pre, post1 and post2 time periods is statistically significant ($F_{(2,192)} = 22.1779$; $p = 0.000$). Hypothesis 8b is rejected. Perusal of mean scores show progressive increase from pre to post1 and post2. But this increase cannot be attributed exclusively to intervention because the group x time interaction effect is not significant ($F_{(2,192)} = 0.4076$; $p = 0.666$). Hypothesis 8c is not rejected.

Table 4.3.17: ***A 2x3 Repeated measure ANOVA for Foreign language fluency***

Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Between subjects	***23873.3***	***97***	246.1166		
Groups	0.785	1	0.785	0.003157	0.955
Subjects within Groups	23872.52	96	248.6721		
Within Subject	***3830.33***	***196***	19.54249		
Time	716.349	2	358.1745	22.17789	0.000
Groups x Time	13.165	2	6.5825	0.407583	0.666
Time x Subject within groups	3100.814	192	16.15007		

From all above analyses, it can be concluded that mindfulness intervention has not significantly reduced fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF), and foreign language anxiety (FLA), as well as not significantly increased self-efficacy (SE) and foreign language fluency (FLU). Though the mean scores show some changes in FNA, CM, PC, INF and major change in FLA in the negative direction and some change in SE and dramatic changes in MIND and FLU in the positive direction, the ANOVA results nullify this trend. Probably, the effect size is very weak. Larger sample size may bring out statistical significance. Alternatively, the nature of dependent variables is such that 2 weeks intervention may not be sufficient to bring about statistically significant changes. Table 4.3.18 shows the hypotheses testing summary of mindfulness intervention.

Table 4.3.18: ***Hypotheses Testing Summary for Mindfulness Intervention***

Hypotheses	Proposed	Result
1a). There will not be any significant increase in mindfulness scores between experimental and control groups	No difference between groups	accepted
1b). There will not be any significant increase in mindfulness scores across pre, post1 and post2 time periods.	No difference within groups	rejected
1c). There will not be any significant interaction in mindfulness scores between groups and time periods.	No difference between groups and time period	accepted
2a). There will not be any significant decrease in fear of non-achievement scores between experimental and control groups	No difference between groups	accepted
2b). There will not be any significant decrease in fear of non-achievement scores across pre, post1 and post2 time periods.	No difference within groups	rejected
2c). There will not be any significant interaction in fear of non-achievement scores between groups and time periods.	No difference between groups and time period	accepted
3a). There will not be any significant decrease in concern over mistakes scores between experimental and control groups	No difference between groups	accepted
3b). There will not be any significant decrease in concern over mistakes scores across pre, post1 and post2 time periods.	No difference within groups	rejected

3c). There will not be any significant interaction in concern over mistakes scores between groups and time periods.	No difference between groups and time period	accepted
4a). There will not be any significant decrease in perfectionistic cognition scores between experimental and control groups	No difference between groups	rejected
4b). There will not be any significant decrease in perfectionistic cognition scores across pre, post1 and post2 time periods.	No difference within groups	rejected
4c). There will not be any significant interaction in perfectionistic cognition scores between groups and time periods.	No difference between groups and time period	accepted
5a). There will not be any significant decrease in inferiority feeling scores between experimental and control groups	No difference between groups	accepted
5b). There will not be any significant decrease in inferiority feeling scores across pre, post1 and post2 time periods.	No difference within groups	accepted
5c). There will not be any significant interaction in inferiority feeling scores between groups and time periods.	No difference between groups and time period	accepted
6a). There will not be any significant decrease in foreign language anxiety scores between experimental and control groups	No difference between groups	accepted
6b). There will not be any significant decrease in foreign language anxiety scores across pre, post1 and post2 time periods.	No difference within groups	rejected

6c). There will not be any significant interaction in foreign language anxiety scores between groups and time periods.	No difference between groups and time period	accepted
7a). There will not be any significant increase in self-efficacy scores between experimental and control groups	No difference between groups	accepted
7b). There will not be any significant increase in self-efficacy scores across pre, post1 and post2 time periods.	No difference within groups	rejected
7c). There will not be any significant interaction in self-efficacy scores between groups and time periods.	No difference between groups and time period	accepted
8a). There will not be any significant increase in foreign language fluency scores between experimental and control groups	No difference between groups	accepted
8b). There will not be any significant increase in foreign language fluency scores across pre, post1 and post2 time periods.	No difference within groups	rejected
8c). There will not be any significant interaction in foreign language fluency scores between groups and time periods.	No difference between groups and time period	accepted

From the above statistical hypotheses testing, the changes in scores of each variable between the two experimental groups over times appeared non-significant. Therefore, H6: Mindfulness-based intervention effectively reduces the participants' levels of foreign language anxiety and increase foreign language fluency was not supported.

Interviews of participants

The interviews of participants in the experiments revealed that the mindfulness intervention made them more aware of their irrational thoughts, which led to anxiety, for examples, fear of making a fool in front of others, fear of making mistakes, worry that others would not understand them or they could not understand others, worry about other people's opinion on them, and comparison of themselves and others' English performance. Once they had realized their signs of foreign language anxiety such as silences and pauses, hand trembling or cold, voice harsh or stuttering, the participants would try to shift their focus from signs of anxiety and irrational thoughts to what they wanted to say and continued speaking. Some stated that once they accepted their own anxiety, they could pull their inner strengths and continue speaking in English. However, some reported that as soon as they realized their own anxiety, they found it hard to calm down and the anxiety seemed to increase.

The participants reported that when they were anxious, they would concentrate more for better speaking, and once they realized that they could do it, they felt their confidence in their English skills increased and their anxiety decreased. Some revealed that when they felt anxious, they would continue speaking until they achieved what they wanted to say. After that, they detected that their signs of anxiety had been increased. They believed that their ardent concentration helped increase their English fluency, but after they finished speaking, their worry of others' opinions on their performance might later increase their anxiety level.

Most participants stated that after the intervention, they started to realize that the causes of their poor English fluency were more from their own irrational thoughts than what they had previously believed about their lack of knowledge such as limited vocabulary and poor grammatically skill. Some reported that once they concerned less about mistakes, they

could speak English more fluently. Some admitted that they were still anxious during the second and the third measurements. However, knowing they could do it because they had done it already in the first measurement, the participants felt they did better in the second and the third impromptu speech activities.

Participants from both experimental groups believed that some factors might affect the results. Some trusted that their anxiety level had decreased because they were more familiar with the measurement process, and being around their acquaintance audiences, and atmosphere. Some of them thought that they needed more time to practice mindfulness meditation in order that they could quickly or automatically become mindful. However, all participants believed that mindfulness helped reduce anxiety and increase their English fluency.

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CHAPTER V

DISCUSSION

Overview of the Chapter

The primary purpose of the current study was to investigate the impact of selected psychosocial factors on the foreign language fluency among Thai people. Two approaches were considered. The first approach looked at the influences between mindfulness (MIND), fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognitions (PC), and, interiority feeling (INF), foreign language anxiety (FLA), and self-efficacy (SE) and foreign language fluency (FLU). The second approach focused on the effectiveness of an intervention program that incorporated components of mindfulness (MIND), fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognitions (PC), and, interiority feeling (INF), foreign language anxiety (FLA), and self-efficacy (SE) and foreign language fluency (FLU).

To meet the objectives of the current research, three separate but interrelated studies (Studies I, II, and III) were conducted, each with its own purpose and methodology. More specifically, the investigation was conducted to determine the direct and indirect influences of mindfulness (MIND) on irrational thought (IRT), foreign language anxiety (FLA), and self-efficacy (SE) and foreign language fluency (FLU), as well as the effects of a mindfulness (MIND) intervention on foreign language anxiety (FLA), and self-efficacy (SE) and foreign language fluency (FLU), being mediated by the 4 components of irrational thought (IRT) - fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognitions (PC), and, interiority feeling (INF).

In the study I in Chapter 4, the EFA and CFA results had shown that the

psychometric properties of the instrument used in this study yielded high validity and reliability, and the scale with item parcels can best define all latent variables. The CFA results revealed that the convergent and the discriminant validity were good. The model 2 (Second-order latent factors) was suggested to best fit the data.

In Study II, 5 structural equation model (SEM) analysis were conducted and the evaluation of alternative models revealed that the Model 5, the full model with a second-order constructs, was the best fitting model. The path model 5 revealed interesting relationships between all variables, and results of hypotheses testing would be discussed in this chapter.

The experiment in Study III, the ANOVA test within/between group had revealed that the mindfulness intervention had increased foreign language fluency among participants. However, the increase was not significantly different between the control group and the treatment group. The observed phenomena would also be explained in this chapter.

Study I (Psychometric Properties of the Scale)

The psychometric properties of the scale

The 112 items scale used in this study was adopted from 7 standardized scales to measure 8 observed variables, and had been translated into Thai.

The items on the scale represented mindfulness (MIND) was adapted from the 24-items Five Facet Mindfulness Questionnaire Short Form (FFMQ-SF), developed by Baer, et. al. (2006), and modified by Bohlmeijer, et.al., (2011). The 39-items FFMQ and the 24-items FFMQ-SF are reliable (Cronbach's Alpha 0.80) and valid instruments and has been widely used in adults with clinically relevant symptoms of depression and anxiety (Bohlmeijer, et.al., (2011). The Cronbach's Alpha for mindfulness (MIND) on the scale of this study was 0.818.

The subscales of irrational thoughts (IRT), comprised of fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognition (PC) and inferiority feeling (INF), were adopted from Perfectionism Inventory (PI - Hill, et. al., 2004), Frost Multidimensional Perfectionism Scale (FMPS - Frost, et.al., 1990), and Perceived Language Discrimination Scale (PLD - Wei, et.al., 2012). All the 3 standardized scales had high reliability of .83-.91, .90 and .94 respectively. The Cronbach's Alpha for fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognition (PC) and inferiority feeling (INF), on the scale of this study was 0.926, 0.959, 0.887 and 0.941 respectively.

The items measuring foreign language anxiety (FLA) was adjusted from Foreign Language Classroom Anxiety Scale Short Form (FLCAS -SF) developed by Horwitz, et.al. (1986) and later adjusted to 28-item scale by Panayides and Walker (2013). The 33-items FLCAS and the 28-items FFMQ-SF are highly reliable (Cronbach's Alpha 0.93) and valid instruments and has been widely used. The Cronbach's Alpha for foreign language anxiety (FLA) on the scale of this study was 0.936.

The items represented self-efficacy (SE) was based on 10-item General Self-Efficacy scale (GSE, Schwarzer and Jerusalem, 1995) which yielded high reliability ranged from .76-.90. The Cronbach's Alpha for self-efficacy (SE) on the scale of this study was 0.952.

Foreign language fluency (FLU) was measured by 10-item Speaking Self-Assessment scale (Babaii, et.al., 2015) which had high reliability of .90. The Cronbach's Alpha for Foreign language fluency (FLU) on the scale of this study was 0.961.

The statistics revealed that all 8 observed variables in this study were normally distributed and exceptionally reliable in accordance to the standardized scales it was adopted from.

The correlations of all construct variables had shown that mindfulness (MIND) has positive relationship with all other construct variables. Fear of non-achievement (FNA), concern over mistake (CM), perfectionistic cognition (PC), inferiority feeling (INF), and foreign language anxiety (FLA) all had positive relationship among each other and had moderate negative relationship with self-efficacy (SE) and foreign language fluency (FLU).

Exploratory Factor Analysis (EFA)

The exploratory factor analysis was used to reduce the data set of summary variables and to explore the correlation between the observed score and the latent score. The results of factor loadings showed that all items in each component correlate or load exceedingly high on the component. The probability of common method bias in this study was also extremely low indicated that the instrument used in this study was less likely a biased instrument. The reliability coefficients of item parcels of all constructs of the scale were also remarkably high, indicating that the measurement scale used in this study is highly consistent. The data set in item parcels are normal and distributed symmetrically. The Cronbach's alpha of factor components of all latent constructs from principal component and factor analysis revealed that the scale had a good reliability and internal consistency.

Confirmatory Factor Analysis (CFA)

The confirmatory factor analysis (CFA), conducted to assess the fit of the conceptual model to the observed data, revealed high convergent validity between theoretically resembling variables, fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (IF), and foreign language anxiety (FLA). High discriminant validity was also observed as there was low correlation between theoretically dissimilar variables, such

as mindfulness (MIND) and irrational thoughts (FNA, CM, PC, INF) as well as foreign language anxiety (FLA).

The result CFA revealed that the second-order latent factors model was better fit to the data, and irrational thought (IRT) better explained fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), and inferiority feeling (INF). In other word, it is not necessary to look at the mediating effect of the 4 variables (FNA, CM, PC, INF) which represent irrational thought (IRT) separately.

In a nutshell, the instruments used in this study are highly reliable and valid to be used in a Thai context.

Study II (Path Analysis)

Structural Equation Modeling (SEM)

The confirmatory factor analysis (CFA) in Study I concluded that the second-order latent factor model, which regarded that fear of non-achievement (FNA), concern for mistakes (CM), perfectionistic cognition (PC), inferiority feeling (IF) represented irrational thought (IRT), better fit the data. Therefore, the researcher has done 5 SEM analyses to find the model that best fit the data.

The evaluation of the 5 nested models revealed that the fifth SEM model (M5), the full structural equation model which comprised of 4 first-order constructs (FNA, CM, PC, INF) linked by a second-order construct (IRT); MIND is linked to IRT, FLA, SE and FLU; IRT is linked to FLA and FLU; FLA is linked to SE and FLU; and SE is linked to FLU, best fit the data and conceptually simple to explain the relationship between all variables. Figure 5.1 shows

the comparison of the proposed hypothetical structural model (M1) to the SEM model (M5) which shows slight differences between the two models. The fifth SEM model (M5), comparing to the proposed conceptual model (M1), has shown stronger relationship between mindfulness (MIND), foreign language anxiety (FLA), self-efficacy (SE) and foreign language fluency (FLU). The direct influence of MIND on SE, MIND on FLU, and FLA on FLU was also found.

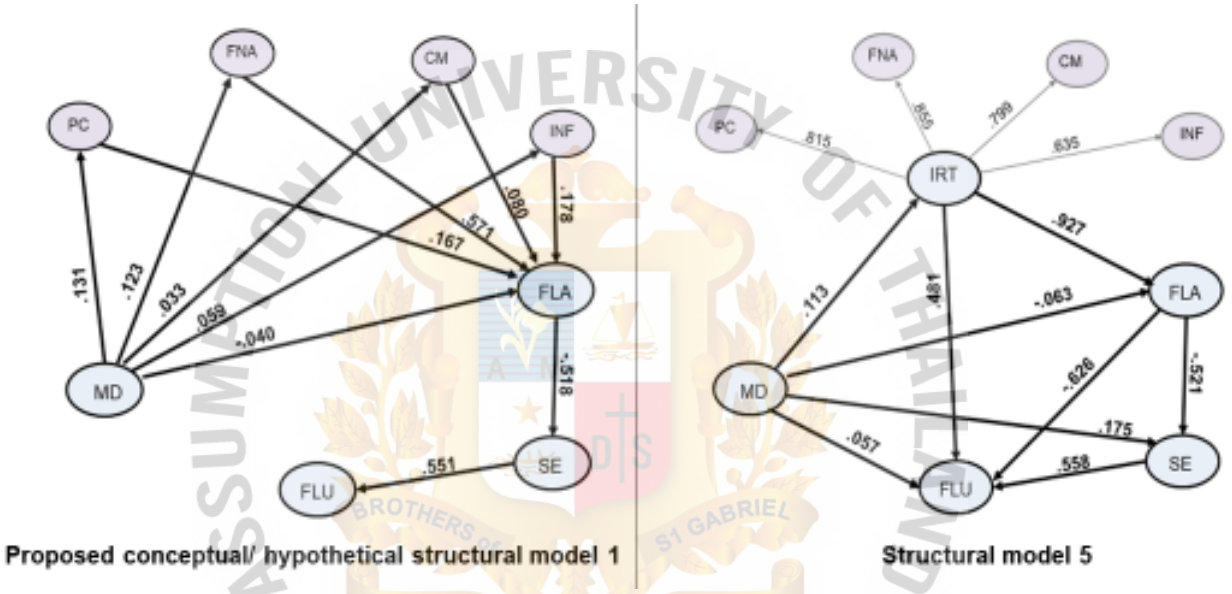

Figure 5.1: ***Comparison of proposed hypothetical structural model 1 and structural model 5***

Relationship Among Construct Variables on Path Model

Mindfulness and Irrational Thoughts

Mindfulness has been found to significantly reduce emotional distress, anxiety, rumination, worry and cognitive distortions (Ramel, et.al., 2004, Borynski, 2006; Toneatto, et.al., 2007; Edwards, 2012; Hindman, 2013; Conley, et.al, 2018).

People usually have concern over mistakes because they keep their interpretation of their past mistakes in mind and think that it might happen in the future (Mason, et.al., 2007). Mindfulness helps to reduce fear of making mistake by staying focused on the present situation, accepting it and shifting their focus to their problem-solving skills. Moreover, mindfulness-based therapies have been reported to lower the levels of rumination, avoidance and perfectionism (Crane, et.al, 2008; Williams, 2008; Perolini, 2010).

However, in this study, mindfulness has been found to slightly and positively influence irrational thoughts. This does not simply mean that the higher level of mindfulness, the higher irrational thoughts, but mindfulness helps a person to realize his/her own irrational thoughts and cope with them. This finding is consistent to Hjeltnes, et.al. (2015) and Dundas, et.al. (2015) who found that mindfulness helped students face the fear of failure better by realizing their inner critics and coping it by accepting fear, focusing in learning situations, moving from fear to curiosity to learn.

A mindful person is better aware of his/her thoughts and quickly realizes the negative interpretation of the situation, a person, then, can shift his focus to whatever he's doing at present, which in turns, reduces anxiety. The interviews of participants in Study III of previous chapter also revealed that as soon as they realized their irrational thoughts, for examples, fear of making a fool in front of others, fear of making mistakes, the participants could shift their focus from irrational thoughts to the topic they had to speak and continued speaking.

Mindfulness and Foreign Language Anxiety

Many research, experiments and practices of mindfulness-based stress reduction program (MBSR) confirmed the influence of mindfulness on anxiety (Broderick, 2005;

Houghton, 2008; Yook, et.al, 2008, Sharma, et.al., 2012; Spowart, 2014). Mindfulness has been found to foster inner attention, help students comprehend better and enhance creativity (Britt, 2011) while in a state of relaxed alertness (Hendricks & Roberts, 1977, cited in Britt, 2011). A mindful person tends to better recognize his/her own anxiety.

The finding from this study revealed that mindfulness (MIND) had a negative direct influence on foreign language anxiety (FLA) but the effect size is minimal. Whenever a person becomes mindful (MIND), s/he is quickly aware of his/her anxiety and let it go, thus, reduce his/her foreign language anxiety (FLA). This is because mindfulness enhances adaptive coping to stressful events by the self-regulation of attention towards the immediate experience, and an open and accepting orientation towards one's experience of the present (Bishop et al., 2004). A mindful person observes thoughts and emotions that enter his present awareness without expanding on or evaluating it, by redirecting his attention towards the breath in the present moment (Chiesa & Malinowski, 2011). Therefore, when a person desires to reduce foreign language anxiety, he should focus more by pulling his attention to whatever he's doing at present. The more mindful he is, the less anxiety he has.

Mindfulness and Self-efficacy

Mindfulness helps a person to come to an awareness of his/her self-efficacy and focus on his ability to perform to reach goals. Recent research found that mindfulness intervention was highly effective and practical to improve self-efficacy of students and office workers to cope with difficulty or crisis (Katan, 2018; Menges & Caltabiano, 2019). Mindfulness was found to mediate the relationship between early maladaptive schemas and self-efficacy (Hosseinzadeh,

et.al., 2019). On the other hand, self-efficacy could partially mediate the relationship between mindfulness and foreign language anxiety (Fallah, 2017).

However, in contrast to previous research, McCann & Davis (2018) found no statistical significance between the use of mindfulness interventions and doctoral students' self-efficacy.

The result of this study revealed that mindfulness had some positive influence on self-efficacy of Thai nationals in using English as a foreign language. The influence of mindfulness has made a person aware of his ability to communicate in English. Therefore, when a person is more mindful, he can concentrate more on his self-efficacy to perform.

Mindfulness and Foreign Language Fluency

Mindfulness was found to have a significant impact on resilience or the ability to recover from distressing and challenging life events with increased knowledge to adaptively cope with similar adverse situations in the future among university students, as well as to increase the learning outcomes (Arnold, 2011; Franco et al., 2010; Keye and Pidgeon, 2013; Ramsburg & Youmans, 2014; Scida & Jones 2017).

In this study, mindfulness had some slightly direct positive influence on foreign language fluency in a way that the more mindful a person is, the better concentration on his/her thoughts and express them without hesitation. Mindfulness helps a person focus better on the topic or ideas he wants to express with less wandering thoughts; therefore, he can communicate in a foreign language more fluently. Moreover, mindfulness helps a person to pull his inner strength to perform his best, thus, he can speak in a foreign language more smoothly.

This phenomenon can be explained that a mindful person, better focuses on his clear and compatible goal, can fully use his skills to overcome a challenge. This state of the mind is termed a 'flow' state or a balance between challenge and skills by a person's interest, control, and focused attention during a task (Cxikszentmihalyi, 1998; Egbert, 2003). 'Flow' acts as a magnet for learning new skills and increasing challenges. If the challenge is too low, a person gets back to 'flow' state by increasing them. If the challenge is too high, a person gets back to 'flow' state by learning new skills (Cxikszentmihalyi, 1998).

In the foreign language classroom, 'flow' was found to have led to the optimal learning. During the 'flow', learners perceive that the challenge is appropriate with clear goal, the topic is interesting, and they can focus and control over situations. Therefore, when a person has intense focus, enjoyment, engaging with the task and lack of self-consciousness, a person can improve performance caused by repetition, motivation, exploration, satisfaction, more time on task, and willingness to risk, which can lead to changes in competence and/or performance (Egbert, 2003).

It can be concluded in this study that mindfulness, though has a slight direct influence on foreign language fluency, can positively influence 'flow' and helps a person balance his challenge and skills in communicating in English by focusing on the topic and controlling the situation, which leads to fluency.

In a nutshell, mindfulness has a positive influence on irrational thoughts, self-efficacy and foreign language fluency, and a negative influence on foreign language anxiety, but the effect sizes are minimal. In other words, mindfulness acts as a receptor which helps a person to be aware of their cognition and behavior at present moment.

Irrational Thought and Foreign Language Anxiety

In many recent studies, negative attitudes, such as fear of being in public and shyness, unwelcoming gestures and facial expressions, interlocutors' corrections, high expectations, fear of negative evaluation, fear of not meeting requirements and fear of failure from others, have contributed to foreign language anxiety when communicating with people on a daily basis (Horwitz & Young, 1991; Stober & Joormann, 2001; Chang, et.al., 2007; Toth, 2010; Yang, et.al., 2015; Tzoannopoulou , 2016; Mulyono, et.al., 2019).

Some distorted thoughts, like concern over mistakes and perfectionism, had contributed to foreign language anxiety of learners (Gregersen and Horwitz, 2002; Wang, et.all, 2018). These anxiety factors interfered with the speech performance when generating and expressing ideas. However, under other conditions (i.e. moderate speaking anxiety), anxiety, on the other hand, assists speakers to perform better orally (Mulyono, et.al., 2019).

This study found that irrational thoughts (IRT) which comprised of fear of non-achievement, perfectionistic cognition, concern over mistake and inferiority feeling, had an extremely strong positive relationship with foreign language anxiety (FLA), which means if IRT increases, FLA also increases. A Thai person who often thinks irrationally tends to feel anxious when speaking English. This is because Thailand is a collectivistic community where people always compare themselves with others and concern of how others think of them (Hofstede, 1981; Leelaharattanarak, 2015), therefore, when it comes to speaking English with others, a Thai person would normally become anxious.

Irrational Thought and Foreign Language Fluency

Some components of irrational thoughts such as perfectionism had been found to have a positive relationship with foreign language proficiency (Rastegar, et.al., 2017).

This study found that irrational thoughts which comprised of fear of non-achievement, perfectionistic cognition, concern over mistake and inferiority feeling, had a moderately positive relationship with foreign language fluency. Most Thai people are very much concerned about their 'face' or self-image and do not want to 'lose face' or feel inferior to others (Leelaharattanarak, 2015; Wang & Chompuming, 2015; Ambele & Boonsuk, 2018). These irrational thoughts make them worry about how others might think of them, thus, cause anxiety. When it comes to foreign language, Thai people usually adore a person who can communicate well in foreign language. Some people who have some irrational thoughts regarding his foreign language skill, tends to speak out rather than keep quiet to show that they can speak English for the sake of face saving.

The moderate positive effect of irrational thoughts on foreign language fluency can also be explained by the concept of 'flow'. These thoughts could be regarded as challenges a person has to cope with by focusing and controlling their performance, while at the same time, learning new skills. Therefore, as a person recognizes his irrational thoughts, he tries his best to perform. However, some people who do not balance 'flow' well enough, may be low in fluency level.

Foreign Language Anxiety and Self-Efficacy

Foreign language anxiety stems from a person's perceived self-worth or self-efficacy (Sparks, et.al., 2000; Tanveer, 2007; Cho, et.al., 2009). When foreign language anxiety occurs, a

person tends to question his foreign language skill and ability to perform. This study found that foreign language anxiety (FLA) had a moderate negative relationship with self-efficacy (SE), corresponded with recent research (Cheng, 2001; Torres & Turner, 2006; Cheng, 2013; Anyadubalu, 2010; Cheng, 2013; Öztürk & Saydam, 2014; Merc, 2015). Many Thai people are very anxious when speaking English to others believing that English is very difficult, and they have poor ability to speak English. Therefore, level of anxiety about English communication was negatively and moderately correlated with Thai people's English self-efficacy.

Foreign Language Anxiety and Foreign Language Fluency

When foreign language anxiety (FLA) occurs, a person tends to perform poorer in a foreign language (FLU). This study found that foreign language anxiety (FLA) had a significant adverse effect on foreign language fluency (FLU), consistent with recent research (Young, 1986; Spark, et.al., 1997; Bailey, et.al., 1998; Onwuegbuzie, et.al., 1998, 1999; Bailey, et.al., 2000; Cheng, 2001; Chen & Lin, 2009; Anyadubalu, 2010). Whenever Thai people feel anxious to communicate with others in English, they tend to stutter, hesitate, make many pauses and fillers ('um', 'er', and 'ah') or just keep smiling and say nothing. Those who are less anxious seem to speak English more fluently and smoothly.

Self-Efficacy and Foreign Language Fluency

Self-efficacy helps a person to perform better. When a person who is confident in his ability to communicate in a foreign language, he tends to speak the language fluently. Rastegar & Karami (2014) found significant positive relationships between belief about language learning aptitude and language achievement.

The finding in this study revealed that self-efficacy (SE) had a positive influence on foreign language fluency (FLU), in accordance with previous research (Chen and Lin, 2009; Anyadubalu, 2010). A Thai person who is confident in his foreign language skills tend to speak the language more fluently.

Mindfulness, Irrational Thought, and Foreign Language Fluency

The study by Mortimore (2017) on how the use of mindfulness techniques may positively affect foreign language anxiety in bilingual primary classrooms found that although the results were inconclusive, there was a modest improvement in a foreign language fluency (FLU) in an experimental group which had high attention (MIND) and low disturbance scores.

This study found that mindfulness (MIND) has a direct positive relationship with foreign language fluency (FLU) and an indirect positive relationship with FLU mediated by irrational thought (IRT). However, the direct effect of mindfulness on foreign language fluency is less than the indirect effect of mindfulness on foreign language fluency mediated by irrational thoughts. As mentioned earlier that a highly mindful person is better aware of his/her thoughts and quickly realizes the negative interpretation of the situation, a person, then, can shift his focus to whatever he's doing at present, that is to continue his foreign language communication. The other way to look at these relationships is that when a mindful person is aware of his own negative thought, such as, concern for mistakes and perfectionistic stance, he tends to think more prudently and speak better with less mistakes.

The mechanistic effect of mindfulness on foreign language fluency mediated by irrational thought can be explained that mindfulness helps a person to recognize his irrational

thoughts as challenges he must focus and control. Therefore, he would try harder to increase 'flow' and speak English more fluently.

Mindfulness, Self-efficacy, and Foreign Language Fluency

Recent research has found that mindfulness and academic self-efficacy have a significant impact on resilience or the ability to adapt and move forward (Keye and Pidgeon, 2013). Fallah (2017) found that mindfulness had a positive effect on foreign language anxiety and a positive effect on coping self-efficacy.

This study found that mindfulness also had an indirect influence on foreign language fluency mediating by self-efficacy. The mediation effect is larger than the direct effect, but the effect size is also minimal. This can be explained that mindfulness helps a person to aware of his/her internal psychological strength and successfully copes with crisis or manipulates change (Flach, 1989; Fallah, 2017). Therefore, when a person is more mindful, s/he can pull his/her strengths or the belief of foreign language communication skills (self-efficacy) and move forward to speak out which increases his foreign language fluency. However, a person's belief in his own ability to perform has played a more important role in influencing foreign language fluency.

Mindfulness, Irrational Thought, Foreign Language Anxiety and Foreign Language Fluency

Many studies have found that mindfulness significantly reduced anxiety (Ramel, et.al., 2004; Toneatto, et.al., 2007; Sears & Kraus, 2009; Yong, et.al., 2009; Semple, et.al., 2010) by reducing distractive, ruminative thoughts and anxiety, and increase well-being, optimism,

emotional regulation, concentration and focus, attention, empathy and academic performance (Mortimore, 2017).

This study found that mindfulness (MIND) had a direct positive impact on foreign language fluency (FLU) with small effect size, and an indirect positive impact on FLU mediated by irrational thoughts (IRT) and foreign language anxiety (FLA) with stronger effect size. Although, FLA had a direct negative effect on FLU, the strong positive impact of MIND on FLU via IRT and FLA had lessened the negative impact. This means the role of mindfulness in influencing foreign language fluency is larger if considered together with irrational thoughts and foreign language anxiety. Therefore, a mindful person who recognizes his negative thoughts, may be anxious, but still be able to communicate in foreign language fluently because mindfulness helps a person to focus better.

Irrational Thought, Foreign Language Anxiety and Foreign Language Fluency

Recent research has found that perfectionistic tendencies in language learners are associated with low academic achievement and poor performance in language skills. Perfectionism also had a positive relationship with foreign language anxiety (Pishghadam &Akhondpoor, 2011). The mediation effect analysis in this study revealed that irrational thoughts (IRT) had a direct positive effect on foreign language fluency (FLU) and an indirect positive effect mediated by foreign language anxiety (FLA). Although FLA was found to have a direct negative impact on FLU, with the direct positive effect of IRT on FLU, the mediating effect of FLA on FLU was not much. A person, who does not want to make mistakes or fools of himself and fear of not meeting others' expectation, tends to perform better to refrain from the negative consequences.

Irrational Thought, Foreign Language Anxiety, Self-Efficacy and Foreign Language Fluency

Flett et.al. (2016) found that perfectionistic cognition, social pressure, self-presentational concerns exacerbated foreign language anxiety, self-efficacy, and performance.

Rastegar & Karami (2014) found significant positive relationships between belief about language learning aptitude and language achievement, but no relationship between concern over mistake and foreign language achievement.

This study found that irrational thoughts (IRT) directly and positively influenced foreign language fluency (FLU). However, IRT had also indirectly and negatively influenced FLU by being mediated by foreign language anxiety (FLA) and self-efficacy (SE). This could explain why some people with irrational thoughts can or cannot speak English fluently. From the interview of the experimental subjects in study III in previous chapter, a person who recognizes his irrational thoughts as challenges would try to perform best in speaking English. On the other hand, a person who recognizes his irrational thoughts and anticipates that things would turn out negatively, would feel more anxious and cannot control the situation, leading to lower English fluency.

Foreign Language Anxiety, Self-Efficacy and Foreign Language Fluency

Recent research has found that efforts to reduce writing anxiety and promote writing self-efficacy could enhance writing scores of students in an English proficiency writing test (Chen & Lin, 2009).

This research found a direct negative relationship, as well as an indirect negative relationship between FLA and FLU mediated by self-efficacy (SE), however, the direct negative

effect size is larger than the indirect effect. This means that when a person anxiety is high, the foreign language fluency is low. However, if a person with anxiety can recognize and be confident in his ability to perform, he can perform better than a person who is not confident in his ability to perform. Therefore, to increase English fluency of a Thai person, one must learn to control his anxiety and believe more on his ability to speak English.

Hypotheses Testing

In this study, there are 6 hypotheses, of which hypotheses 1-5 aim to explain direct and indirect effect between independent variable and dependent variable, and hypothesis 6 aims to test the mindfulness intervention to improve foreign language fluency. Hypotheses 1-5 were all supported indicating that mindfulness had directly and indirectly influenced foreign language anxiety and foreign language fluency. The predictive model (M5) effectively explained the relationship between mindfulness, irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency.

However, Hypothesis 6 which aims to test whether mindfulness-based intervention effectively reduces foreign language anxiety and increase foreign language fluency was not supported.

Study III (Experiment)

The Mindfulness Intervention

The researcher has developed mindfulness intervention aiming to decrease irrational thoughts (fear of non-achievement, concern over mistakes, perfectionistic cognition, inferiority feeling), foreign language anxiety, and increase mindfulness, self-efficacy, and foreign language fluency. A 2x3 repeated measures ANOVA was used to determine the effect of intervention.

The first independent variable is a 2 level between subject variable (experimental and control groups), and the second independent variable is a 3-levels with-in subject variable (Pre, Post 1 and Post 2 conditions).

Although mindfulness has proven by Study I and II to have positive influences on irrational thoughts (IRT), self-efficacy and foreign language fluency and a negative influence on foreign language anxiety, it could not be concluded that mindfulness intervention significantly reduced fear of non-achievement (FNA), concern over mistakes (CM), perfectionistic cognition (PC), inferiority feeling (INF), and foreign language anxiety (FLA), which represent irrational thoughts (IRT). Mindfulness cannot also be stated to have significantly increased self-efficacy (SE) and foreign language fluency (FLU). Though the mean scores show some changes from pre-test to post-test 1 and from post-test 1 to post-test 2 in FNA, CM, PC, INF and FLA in the negative direction and SE and FLU in the positive direction, in compliance to the results of study I and II, the ANOVA results revealed no significant changes in all variables between the experimental group and the control group over the time period. Therefore, we cannot say that the changes are due to the interaction effect of the mindfulness intervention.

The interviews of some experimental subjects from both experiment 1 and 2 groups have revealed that some factors might have affected the results. Some believe that their anxiety level has decreased because they are more familiar with the measurement process, the colleague audiences, and atmosphere. Some of them think that they need more time to practice mindfulness meditation and quickly or automatically become mindful. However, most participants believe that mindfulness can help reduce anxiety and increase their English fluency.

Therefore, the unexpected results of the mindfulness intervention probably because of the weak effect size of sample groups due to diversification of the sample, including age ranges,

occupations (students, office workers, business owner, self-employed and unemployed) and prior experiences of meditation practices. Larger sample size may bring out statistical significance.

The mindfulness intervention was newly designed to increase the awareness of the participants' irrational thoughts and foreign language anxiety through the observation of cognitions and physical signs of anxiety. When the participants are aware of their irrational thoughts and anxiety, hopefully, they can focus and control the challenges and continue to perform. However, the nature of dependent variables is such that 2-weeks intervention with 30-minutes daily practice may not be sufficient to bring about statistically significant changes because people require different time to master their minds until their mindfulness level increase and become their new normal habit.

Moreover, the measurement process should be more effectively designed to control the experimenter biases, such as preconceived notion of the expected outcomes.

There were slight increases in means of mindfulness (pre-test and post-test 1) in the experiment 1 groups who receive no intervention except a lecture on 'foreign language development' as the placebo. The changes might partly result from the more knowledge and motivation of the lecture. At the same time, there were slight increases in means of mindfulness (pre-test and post-test 1) in the experiment 2 groups who receive intervention (mindfulness workshop and daily meditation practices). The low changes might result from weak understanding of the mindfulness practices and lack of strong determination). However, the changes between post-test 1 and post-test 2 of experiment 1 group (intervention - mindfulness workshop and daily meditation practices) and experiment 2 group (continue mindfulness workshop and daily meditation practices) revealed that both groups have significant changes in mindfulness scores. This might result from better understanding of mindfulness practices and

stronger determination of the participants. Therefore, for more effective intervention in future, an intensive full 5-7 days mindfulness workshop should be organized to ensure the participants' understanding and determination, as recent studies with strong positive outcome of mindfulness interventions (Singh, et.al., 2006; Broderick & Metz, 2009; Singh, et.al., 2010). These studies reported that intensive mindfulness training increased more involvement of the participants and resulted in more effective learning, positive behaviors, and higher-level cognitive functions such as memory, attention, flexible problem solving, and inhibition.

Limitation of the Study

Some limitations should be considered before applying the results obtained in this research. First of all, the short period of time in circulating the online questionnaires may limit the number of respondents.

Secondly, another drawback relates to the data collection technique, the only data collection technique was on-line questionnaire. It is suggested that researchers could adapt other forms of data collection, such as real setting observation, face to face interviews, in order to build a more comprehensive understanding of complicated issues such as mindfulness, foreign language anxiety and foreign language fluency.

Moreover, the data collected is based on self-report and the respondent's perceptions on online survey which contains large number of questions, the longer time spent on answering the questionnaires may generate biases.

The experiment has lots of limitations. Firstly, due to the diversified sample groups of students, office workers, and business owners, each subtypes of sample groups have too small number of the experimental participants. Therefore, the results cannot be generalized to all Thai nationals.

Secondly, the design is not a true experiment in a classroom or a real-life setting. The short activity before each measurement might not be sufficient to observe the differences of mindfulness and other factors that affect foreign language fluency.

Moreover, it is difficult to conduct an experiment which involve the daily practice of meditation in a short period of time. It would also be useful to conduct a longitudinal study to explore mindfulness effect on foreign language anxiety and foreign language fluency over time.

In addition, although there were differences between the pre-test and post-test of mindfulness, irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency within experiment and control groups but the difference is non-significant between groups. This might due to the acquaintance among participants and their coping strategy that interfere with foreign language anxiety. Moreover, as the participants completed the measure after each intervention, they may get better practice, or bored or tired from the repeatedly tested. As the results of which, we cannot conclude that mindfulness and/or other factors generate the differences between the two groups.

Implications and Recommendation for Future Research

This study points to several implications to reducing foreign language anxiety and improving foreign language fluency. It would be beneficial to foreign language learners to use a mindful strategy to cope with anxiety, improve confidence in their ability and communicate fluently. When negative thoughts and foreign language anxiety are aware by the mindfulness, the learners will master to accept and gradually overcome anxieties, worries and fears in foreign language communication.

As a foreign language teacher, the researcher recommends that a 5-10 minutes mindfulness practice, such as focusing on one part of the body or breath, should be conducted at the beginning of EFL class to increase the students' awareness of their own irrational thoughts, reduce stress and anxiety, increase concentration, creativity and achievement. The principles of mindfulness-based therapies, especially cognitive transformation therapy (CTT), should be incorporated in learning activities to help learners recognize their irrational thoughts which increase foreign language anxiety and reduce foreign language fluency. For example, a teacher may ask why a learner speaks that way and whether there are any other ways to say it. The learners could write them down and try to understand their own thinking patterns which produce such sentences. Once they see their thinking patterns and irrational thoughts that lead to anxiety, they can learn new skills and focus more on how to perform better.

An organization may also benefit from mindfulness if managers and staff members regularly do a mindful practice at the beginning of work, meeting, negotiation, and presentation. Mindful workers or meeting participants can focus better on the objectives and outcomes of their tasks.

With the advancement in technology and globalization, mindfulness practice is important in every field of life because it helps a person to cope with general stress and enhance efficacy and achievement. Mental stress and anxiety are the product of wandering mind which is full of irrational thoughts. If a person can master his own mind by focusing on the present state, unconditionally, accept whatever manifests in mind at that present moment and quickly return to the normal neutral state of mind, stress and anxiety can be reduced. Therefore, the practice of meditation should be incorporated in any daily activities, such as studying, business meetings,

public speaking, and socializing to reduce general anxiety and enhance fluent and successful communication through mindful listening and speaking with more understanding.

The experimental studies in future should have a longer and more frequent practices of mindfulness meditation and daily activities, as well as consider examining the long-term effect of mindfulness on irrational thoughts, foreign language anxiety, self-efficacy, and foreign language fluency.

Although mindfulness has been found to influence irrational thoughts, foreign language anxiety, self-efficacy and foreign language fluency, the effects also depend on an individual coping and learning skills. Therefore, future research should explore the theoretical and mechanical impact of mindfulness on related factors and also investigate the potential for mindfulness practices to promote positive thought, and the role of mindfulness in other setting, for examples, public speaking, coaching and counseling.

Conclusion

Mindfulness increases a person's ability to be aware of his actions and conceptions., helps a person recognize irrational thoughts, reduces anxiety, enhances a person's self-efficacy, and promote achievement. This study confirms that by mastering mindfulness, a person becomes aware of his irrational thoughts and uncomfortable and anxious feelings at present moment and copes with it by accepting it non-judgmentally and moving forward. Mindfulness facilitates a foreign language speaker to learn from his own experiences and others' and cultivate creativity and intelligence, thus, enhances positive perceptions and confidence which leads to higher achievement.

However, continued daily practices are recommended to increase mindfulness, for examples, before classes, meetings and public events, to enhance the ability to focus and cope with difficulty. Although the experimental result in this study remains unclear of how mindfulness intervention program reduces foreign language anxiety and increases foreign language fluency in a short period of time. Future research is recommended to explore the mechanism of mindfulness on other factors.

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APPENDICES

ASSUMPTION UNIVERSITY OF THAILAND
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Appendix A

Expert Panel for Instrument Translation

1. **Associate Professor Araya Suntornvipat, Ph.D.**

   Faculty member, Faculty of Science and Arts, Burapha University, Chataburi Campus, Thailand; bilingual expert.

2. **Ms. Petchyupa Boonsirijarungrat, Ph.D.**

   Founder and executive editor, Na Petch Publisher, Bangkok, Thailand; bilingual expert.

3. **Mr. Yuthsra Joe Somsak**

   Member, Kru Kate English School, Bangkok, Thailand; bilingual expert.

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Appendix B
Instruments Used in the Current Study

ASSUMPTION UNIVERSITY

GRADUATE SCHOOL OF HUMAN SCIENCE

Dear Participant,

The purpose of this survey is to aims to explore mindfulness and other factors associating with Thai people's foreign language anxiety, foreign language fluency and self-efficacy when speaking English. The questionnaire which follows is completely anonymous and the answers you provide will be used for research purposes only. There are no right or wrong answers. Please answer all questions as honestly as you can.

If you have any questions or concerns about the research itself, please feel free to contact me: Ms. Netpreeya Choomchaiyo, researcher/doctoral student at: krukatenetpreeya@gmail.com or contact our program director at the Graduate School of Psychology, Assumption University, Hua Mak Campus, Bangkok at (02)-3004543 Ext: 3636 or e-mail counseling@au.edu.

Thank you for your cooperation.

Part 1: Personal Information

Directions: Please complete this part by marking "✓" inside the box to represent your answers.

1. Gender □ Male Female

2. Age □ 18-23 years □ 24-35 years □ 36-45 years □ 46-55 years □ 56 years and above

3. Occupation □Student □Employee □Business owner □Self-employed Unemployed

4. Marital Status □ Single □ Married □ Divorced/Separated □ Widowed

5. In your family, you are a/an □ only child □ eldest child middle child
□ youngest child □ adopted child

6. Educational Level □ Diploma □ Vocational Certificate □ Bachelor's Degree
□ Master's Degree □ Doctorate Degree

7. Monthly Income □ Less than 20,000 Baht □ 20,001- 35,000 Baht
□ 35,001– 50,000 Baht □ 50,001 Baht and above

8. First language/ Mother tongue □ Thai □ Chinese □ Others_____

9. Foreign language □ English □ Chinese □ Others_____

10. Religion □ Buddhism □ Christianity □ Islam □ Hindu Others □ None

11. How often do you meditate? □ Never □ a few times a year a few times a month
□ a few times a week □ Everyday

Part 2: Mindfulness

Directions: Please rate each of the following statements with the number that best describes your own opinion of what is generally true for you. Circle the answer that best applies to you.
1 = Never or rarely true 2 = Rarely true 3 = Sometimes true 4 = Often true 5 = Very often or always true

1	I'm good at finding words to describe my feelings.	1	2	3	4	5
2	I can easily put my beliefs, opinions, and expectations into words.	1	2	3	4	5
3	I watch my feelings without getting lost in them.	1	2	3	4	5
4	I tell myself I shouldn't be feeling the way I'm feeling.	1	2	3	4	5
5	It's hard for me to find the words to describe what I'm thinking.	1	2	3	4	5
6	I pay attention to sensations, such as the wind in my hair or sun on my face.	1	2	3	4	5
7	I make judgments about whether my thoughts are good or bad.	1	2	3	4	5
8	I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5
9	When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.	1	2	3	4	5
10	I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	1	2	3	4	5
11	When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.	1	2	3	4	5
12	It seems I am "running on automatic" without much awareness of what I'm doing.	1	2	3	4	5
13	When I have distressing thoughts or images, I feel calm soon after.	1	2	3	4	5

14	I tell myself that I shouldn't be thinking the way I'm thinking.	1	2	3	4	5
15	I notice the smells and aromas of things.	1	2	3	4	5
16	Even when I'm feeling terribly upset, I can find a way to put it into words.	1	2	3	4	5
17	I rush through activities without being really attentive to them.	1	2	3	4	5
18	When I have distressing thoughts or images, I am able just to notice them without reacting.	1	2	3	4	5
19	I think some of my emotions are bad or inappropriate and I shouldn't feel them.	1	2	3	4	5
20	I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	1	2	3	4	5
21	When I have distressing thoughts or images, I just notice them and let them go.	1	2	3	4	5
22	I do jobs or tasks automatically without being aware of what I'm doing.	1	2	3	4	5
23	I find myself doing things without paying attention.	1	2	3	4	5
24	I disapprove of myself when I have irrational ideas.	1	2	3	4	5

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Part 3: Irrational thoughts

Directions: Please rate each of the following statements with the number that best describes how much you generally agree with each statement. Circle the answer that best applies to you.
1 = Strongly disagree 2 = Disagree somewhat 3 = Neither agree nor disagree 4 = Agree somewhat 5 = Strongly agree

Fear of Non-achievement,

1	I am over-sensitive to the comments of others.	1	2	3	4	5
2	I compare my English skills to others and often feel inadequate.	1	2	3	4	5
3	I am sensitive to how others respond to my English skills.	1	2	3	4	5
4	I'm concerned with whether or not other people approve of my English skills.	1	2	3	4	5
5	I often don't say anything in English because I'm scared, I might say the wrong thing.	1	2	3	4	5
6	I am self-conscious about what others think of me.	1	2	3	4	5
7	I am often concerned that people will take what I say in English the wrong way.	1	2	3	4	5
8	I spend a great deal of time worrying about other people's opinion of me.	1	2	3	4	5

Concern over mistakes

9	If I make mistakes in English, people might think less of me.	1	2	3	4	5
10	I am particularly embarrassed by failure to speak English.	1	2	3	4	5
11	I over-react to making mistakes in English.	1	2	3	4	5

12	If someone points out a mistake I've made in English, I feel like I've lost that person's respect in some way.	1	2	3	4	5
13	If I mess up on one thing, people might start questioning everything I do.	1	2	3	4	5
14	To me, a mistake equals failure.	1	2	3	4	5
15	Making mistakes in English is a sign of stupidity.	1	2	3	4	5
16	If I make a serious mistake in English, I feel like I'm less of a person.	1	2	3	4	5
17	If I fail to speak English, I am a failure as a person.	1	2	3	4	5
18	I should be upset if I make a mistake in English.	1	2	3	4	5
19	If someone speak better English than I, then I feel like I failed the whole thing.	1	2	3	4	5
20	If I fail partly, it is as bad as being a complete failure.	1	2	3	4	5
21	I hate being less than best at things.	1	2	3	4	5
22	If I do not do as well as other people, it means I am an inferior human being.	1	2	3	4	5
23	If I do not do well all the time, people will not respect me.	1	2	3	4	5
24	The fewer mistakes I make, the more people will like me.	1	2	3	4	5

Perfectionistic cognition

25	People set very high standards for my English skills.	1	2	3	4	5
26	People want me to do the best in English.	1	2	3	4	5
27	Only outstanding performance is good enough in my family.	1	2	3	4	5

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28	People have expected excellence from me in English communication.	1	2	3	4	5
29	My boss and colleagues have always had higher expectations for my English than I have.	1	2	3	4	5
30	Even when I speak English very carefully, I often feel that it is not quite right.	1	2	3	4	5
31	I usually have doubts about the simple everyday English I speak.	1	2	3	4	5
32	I tend to get behind in my English communication because I repeat things over and over.	1	2	3	4	5
33	It takes me a long time to speak English “right”.	1	2	3	4	5

Inferiority feeling

34	Others ignore me because of my English.	1	2	3	4	5
35	Others avoid talking to me because of my English.	1	2	3	4	5
36	My opinions or ideas are not taken seriously because of my English.	1	2	3	4	5
37	Others treat me as if I don’t know anything because of my English.	1	2	3	4	5
38	Others look down on me because of my English.	1	2	3	4	5
39	I feel rejected by others because of my English.	1	2	3	4	5
40	Others are annoyed by my English.	1	2	3	4	5

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Part 4: Foreign Language Anxiety

Directions: Please rate each of the following statements with the number that best describes how much you generally agree with each statement. Circle the answer that best applies to you.
1 = Strongly disagree 2 = Disagree somewhat 3 = Neither agree nor disagree 4 = Agree somewhat 5 = Strongly agree

1	I never feel quite sure of myself when I am speaking English.	1	2	3	4	5
2	I tremble when I know that I'm going to speaking English.	1	2	3	4	5
3	It frightens me when I don't understand what other is saying English.	1	2	3	4	5
4	I keep thinking that the others are better at English than me.	1	2	3	4	5
5	I am usually at ease during an English conversation.	1	2	3	4	5
6	I start to panic when I have to speak English without preparation.	1	2	3	4	5
7	I worry about the consequences of failing my English communication.	1	2	3	4	5
8	I don't understand why some people get so upset over English.	1	2	3	4	5
9	When I speak English, I can get so nervous that I forget things I know.	1	2	3	4	5
10	It embarrasses me to voluntarily give opinions in English in a class/meeting.	1	2	3	4	5
11	I would not be nervous speaking English with native speakers.	1	2	3	4	5
12	In an English conversation, I get upset when I don't understand what other is correcting.	1	2	3	4	5
13	Even if I am well prepared, I feel anxious about my English.	1	2	3	4	5
14	I feel confident when I speak English.	1	2	3	4	5

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15	I am afraid that a person I speak English to is ready to correct every mistake I make.	1	2	3	4	5
16	I can feel my heart pounding when I'm going to speak English to others.	1	2	3	4	5
17	The more I study English, the more confused I get.	1	2	3	4	5
18	I always feel that the others speak English better than I do.	1	2	3	4	5
19	I feel very self-conscious about speaking English in front of others.	1	2	3	4	5
20	English class/meeting moves so quickly that I worry about getting left behind.	1	2	3	4	5
21	I feel more tense and nervous in my English class/meeting than in the others.	1	2	3	4	5
22	I get nervous and confused when I am speaking English in class/meeting.	1	2	3	4	5
23	When I'm on my way to English class/meeting, I feel very sure and relaxed.	1	2	3	4	5
24	I get nervous when I don't understand every word the English other says.	1	2	3	4	5
25	I feel overwhelmed by the number of rules I have to learn to speak English.	1	2	3	4	5
26	I am afraid that the others will laugh at me when I speak English.	1	2	3	4	5
27	I would probably feel comfortable around native speakers of English.	1	2	3	4	5
28	I get nervous when asked questions in English which I haven't prepared in advance.	1	2	3	4	5

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Part 5: Self Efficacy

Directions: Please rate each of the following statements with the number that best describes your own opinion of what is generally true for you. Circle the answer that best applies to you.
1 = Never or rarely true 2 = Rarely true 3 = Sometimes true 4 = Often true 5 = Very often or always true

1	I can always manage to solve my English problems if I try hard enough.	1	2	3	4	5
2	If someone doesn't understand my English, I can find the means and ways to say what I want.	1	2	3	4	5
3	It is easy for me to stick to my aims and accomplish my goals in English communication.	1	2	3	4	5
4	I am confident that I could deal efficiently with unexpected English conversation.	1	2	3	4	5
5	Thanks to my resourcefulness, I know how to handle unforeseen English conversation.	1	2	3	4	5
6	I can solve most problems if I invest the necessary effort in English communication.	1	2	3	4	5
7	I can remain calm when facing difficulties in an English conversation because I can rely on my coping abilities.	1	2	3	4	5
8	When I am confronted with a problem in an English communication, I can usually find several solutions.	1	2	3	4	5
9	If I am in trouble in an English communication, I can usually think of a solution.	1	2	3	4	5
10	In an English conversation I can usually handle whatever comes my way.	1	2	3	4	5

Part 6: Foreign language fluency

Directions: Please assess your overall English-speaking ability. Circle the answer that best reflect your ability.

1 = Novice 2 = Lower intermediate 3 = Upper intermediate 4 = Advanced 5 = Superior

1	Fluency (without pauses, hesitation, and false starts)	1	2	3	4	5
2	Grammar (accuracy and variety of structures)	1	2	3	4	5
3	Vocabulary (appropriateness and variety of expressions)	1	2	3	4	5
4	Pronunciation (stress, rhythm, and intonation)	1	2	3	4	5
5	Communicative effectiveness (clarity of ideas and comprehensibility i.e., understandability, of speech)	1	2	3	4	5
6	Topic management (topic relevance, topic coverage, and adequacy of details and examples)	1	2	3	4	5
7	Confidence (anxiety-free speech)	1	2	3	4	5
8	Organization (initiation, development, termination/ interconnectedness of ideas)	1	2	3	4	5
9	Strategy use (avoiding unfamiliar language and compensating by using familiar language)	1	2	3	4	5
10	Time management (timing your talk)	1	2	3	4	5

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Appendix C

Thai Validated Instruments Used in the Current Study

แบบสำรวจเพื่อการศึกษาวิจัย
มหาวิทยาลัยอัสสัมชัญ
บัณฑิตวิทยาลัย คณะมนุษย์ศึกษา

เรียน ผู้กรอกแบบสำรวจ

แบบสำรวจเพื่อการศึกษาวิจัยชุดนี้ถูกจัดทำขึ้นเพื่อศึกษาความสัมพันธ์ของการมีสติรับรู้และปัจจัยต่างๆที่เกี่ยวข้องกับความวิตกกังวลในการใช้ภาษาอังกฤษ รวมถึง ความคล่องในการใช้ภาษาอังกฤษ และ การรับรู้ความสามารถของตนเองในการใช้ภาษาอังกฤษของคนไทย แบบสำรวจชุดนี้ไม่มีการระบุตัวตนของผู้กรอกแบบสำรวจ และคำตอบที่ท่านตอบในแบบสำรวจนี้จะถูกนำไปใช้เพื่อการศึกษาวิจัยเท่านั้น ไม่มีคำตอบที่ถูกหรือผิดในแบบสำรวจนี้ โปรดตอบคำถามตามที่เป็นจริง

หากท่านมีข้อสงสัยหรือความกังวลใดเกี่ยวกับงานวิจัยชิ้นนี้ ท่านสามารถติดต่อ นางเนตรปรียา ชุมไชโย ผู้ทำวิจัย/นักศึกษาปริญญาเอกได้ที่ krukatenetpreeya@gmail.com หรือ ผู้อำนวยการโครงการบัณฑิตศึกษา คณะจิตวิทยา มหาวิทยาลัยอัสสัมชัญ วิทยาเขตหัวหมาก กรุงเทพมหานคร ได้ที่หมายเลขโทรศัพท์ (02)-3004543 Ext: 3636 หรืออีเมล์ counseling@au.edu

ขอขอบคุณเป็นอย่างสูงสำหรับความร่วมมือ

ส่วนที่ 1: ข้อมูลส่วนบุคคล

คำสั่ง: กรุณาทำเครื่องหมาย“✓” ในช่อง □ ที่ตรงกับคำตอบของท่าน

1. เพศ □ชาย หญิง

2. อายุ □ 18-23 ปี □ 24-35 ปี □ 36-45 ปี 46-55 ปี □ 56 ปี หรือมากกว่า

3. อาชีพ □นักศึกษา □ พนักงาน/ข้าราชการ □ เจ้าของธุรกิจ □ อาชีพอิสระ □ว่างงาน

4. สถานภาพ □ โสด □ สมรส □ หย่า/แยกกันอยู่ □ หม้าย

5. ในครอบครัวท่านเป็น □บุตรคนเดียว □บุตรคนโต □บุตรคนกลาง

□บุตรคนสุดท้อง □บุตรบุญธรรม

6. การศึกษาสูงสุด □ประกาศนียบัตร □ปวช./ปวส. □ปริญญาตรี

□ปริญญาโท □ปริญญาเอก

7. รายได้ต่อเดือน □ ต่ำกว่า 20,000 บาท □ 20,001- 35,000 บาท

□ 35,001– 50,000 บาท 50,001 บาทขึ้นไป

8. ภาษาแม่/ภาษาหลัก □ ไทย □ จีน □ อื่นๆ_____

9. ภาษาต่างประเทศที่พูดได้ □ อังกฤษ □ จีน □ อื่นๆ_____

10. ศาสนา □พุทธ คริสต์ □อิสลาม □ฮินดู □ อื่นๆ_____ □ ไม่นับถือศาสนา

11. ท่านนั่งสมาธิบ่อยแค่ไหน ไม่เคย □ 2-3 ครั้งใน 1 ปี □ 2-3 ครั้งใน 1 เดือน

□ 2-3 ครั้งใน 1 สัปดาห์ ทุกวัน

ส่วนที่ 2: การมีสติรับรู้

คำสั่ง: โปรดประเมินแต่ละข้อความต่อไปนี้ ด้วยการเลือกวงกลมล้อมรอบหมายเลขที่อธิบายความเห็นของท่านเกี่ยวกับความจริงของข้อความได้ดีที่สุด ดังนี้

1 = ไม่จริงเลย 2 = ไม่จริง 3 = ไม่แน่ใจ 4 = จริง 5 = จริงอย่างยิ่ง

1	ฉันสามารถสรรหาถ้อยคำมาอธิบายความรู้สึกของฉันได้ดี	1	2	3	4	5
2	ฉันสามารถถ่ายทอดความเชื่อ ความคิดเห็น และความคาดหวังของฉันออกมาเป็นคำพูดได้ง่ายๆ	1	2	3	4	5
3	ฉันเฝ้ามองดูความรู้สึกของฉันโดยไม่วอกแวกได้	1	2	3	4	5
4	ฉันมักบอกตัวเองว่าฉันไม่ควรมีความรู้สึกอย่างที่ฉันกำลังรู้สึกอยู่	1	2	3	4	5
5	เป็นเรื่องยากสำหรับฉันที่จะสรรหาถ้อยคำมาอธิบายสิ่งที่ฉันคิด	1	2	3	4	5
6	ฉันรับรู้ความรู้สึก เช่น ลมพัดโดนเส้นผม หรือ แสงแดดที่ส่องกระทบผิวของฉันได้ดี	1	2	3	4	5
7	ฉันชอบตัดสินว่าความคิดของฉันถูกหรือผิด	1	2	3	4	5
8	ฉันรู้สึกว่าเป็นการยากสำหรับฉันที่จะมีสติรับรู้สิ่งต่างๆที่เกิดขึ้น ณ ปัจจุบันตลอดเวลา	1	2	3	4	5
9	เวลาที่ฉันเกิดความคิดวิตกกังวลหรือนึกถึงภาพที่ทำให้ทุกข์ใจ ฉันจะฉุกคิด และแค่รับรู้ความคิดและภาพเหล่านั้นโดยไม่ปล่อยให้มันมาครอบงำจิตใจของฉัน	1	2	3	4	5
10	ฉันรับรู้เสียงต่างๆได้ดี เช่น เสียงนาฬิกาเดิน เสียงนกร้อง หรือเสียงรถยนต์ที่วิ่งผ่านไปมา	1	2	3	4	5

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11	เมื่อมีความรู้สึกอะไรบางอย่างเกิดขึ้นบนร่างกาย เป็นเรื่องยากสำหรับฉันในการสรรหาคำที่ถูกต้องมาอธิบายความรู้สึกนั้นได้	1	2	3	4	5
12	ดูเหมือนว่าฉันมักจะทำอะไรเป็นอัตโนมัติโดยไม่ค่อยรู้ตัวว่ากำลังทำอะไรอยู่	1	2	3	4	5
13	เวลาที่ฉันเกิดความคิดวิตกกังวลหรือนึกถึงภาพที่ทำให้ทุกข์ใจ เพียงไม่นานฉันสามารถสงบลงได้	1	2	3	4	5
14	ฉันชอบบอกตัวเองว่าฉันไม่ควรคิดอะไรอย่างที่ฉันกำลังคิดอยู่	1	2	3	4	5
15	ฉันสังเกตและรับรู้กลิ่นต่างๆได้ดี	1	2	3	4	5
16	แม้ในเวลาที่ฉันรู้สึกผิดหวังอย่างรุนแรง ฉันก็ยังสามารถอธิบายออกมาเป็นคำพูดได้	1	2	3	4	5
17	ฉันรีบลงมือทำกิจกรรมต่างๆโดยไม่ค่อยได้ใส่ใจกับมัน	1	2	3	4	5
18	เวลาที่ฉันเกิดความคิดวิตกกังวลหรือนึกถึงภาพที่ทำให้ทุกข์ใจ ฉันสามารถแค่รับรู้มันโดยไม่ต้องมีปฏิกิริยาอะไร	1	2	3	4	5
19	ฉันคิดว่าอารมณ์บางอย่างของฉันไม่ดีหรือไม่เหมาะสม และฉันไม่ควรมีอารมณ์อย่างนั้น	1	2	3	4	5
20	ฉันสังเกตองค์ประกอบของงานศิลปะหรือธรรมชาติ เช่น สี รูปร่าง พื้นผิว หรือ แสง เงา ได้ดี	1	2	3	4	5
21	เวลาที่ฉันเกิดความคิดวิตกกังวลหรือนึกถึงภาพที่ทำให้ทุกข์ใจ ฉันสามารถแค่รับรู้มันแล้วปล่อยมันไป	1	2	3	4	5

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22	ฉันทำงานหรือทำสิ่งต่างๆอย่างอัตโนมัติโดยไม่ค่อยรู้ตัวว่าฉันกำลังทำอะไรอยู่	1	2	3	4	5
23	ฉันมักทำสิ่งต่างๆโดยไม่ค่อยได้ใส่ใจ	1	2	3	4	5
24	ฉันไม่ชอบเวลาที่ฉันมีความคิดฟุ้งซ่านไม่เป็นเหตุเป็นผล	1	2	3	4	5

ส่วนที่ 3: **ความคิดที่ไม่เป็นเหตุเป็นผล**

คำสั่ง: โปรดประเมินแต่ละข้อความต่อไปนี้ ด้วยการเลือกวงกลมล้อมรอบหมายเลขที่แสดงความเห็นด้วย/ไม่เห็นด้วยของท่านต่อข้อความแต่ละข้อได้ดีที่สุด ดังนี้
1 = ไม่เห็นด้วยอย่างยิ่ง 2 = ไม่เห็นด้วย 3 = ไม่แน่ใจ 4 = เห็นด้วย 5 = เห็นด้วยอย่างยิ่ง

กลัวความไม่สำเร็จ

1	ฉันอ่อนไหวต่อความคิดเห็นของผู้อื่นมากเกินไป	1	2	3	4	5
2	ฉันเปรียบเทียบทักษะภาษาอังกฤษของฉันกับของคนอื่นๆ และมักจะรู้สึกว่าฉันรู้ไม่มากพอ	1	2	3	4	5
3	ฉันอ่อนไหวต่อการที่คนอื่นมีปฏิกิริยาตอบสนองต่อทักษะภาษาอังกฤษของฉัน	1	2	3	4	5
4	ฉันเป็นห่วงกังวลว่าคนอื่นจะยอมรับทักษะภาษาอังกฤษของฉันหรือไม่	1	2	3	4	5
5	ฉันมักจะไม่พูดอะไรเป็นภาษาอังกฤษเพราะฉันกลัวว่าฉันอาจจะพูดผิด	1	2	3	4	5

6	ฉันประหม่าเกี่ยวกับสิ่งที่คนอื่นคิดกับฉัน	1	2	3	4	5
7	ฉันมักจะกังวลว่าคนอื่นจะเข้าใจภาษาอังกฤษที่ฉันพูด ผิดความหมายไปจากที่ฉันตั้งใจ	1	2	3	4	5
8	ฉันมัวแต่เสียเวลากังวลว่าคนอื่นจะคิดเกี่ยวกับฉันอย่างไร	1	2	3	4	5

กลัวความผิดพลาด

9	หากฉันใช้ภาษาอังกฤษผิดพลาด ผู้คนจะศรัทธาฉันน้อยลง	1	2	3	4	5
10	ฉันรู้สึกอับอายจากความล้มเหลวในการพูดภาษาอังกฤษ	1	2	3	4	5
11	ฉันมักมีปฏิกิริยาตอบโต้เกินเลยไปเมื่อฉันพูดภาษาอังกฤษผิดพลาด	1	2	3	4	5
12	หากมีใครชี้ให้เห็นข้อผิดพลาดในการใช้ภาษาอังกฤษของฉัน ฉันรู้สึกว่าฉันสูญเสียความน่านับถือจากผู้อื่นไปในทางใดทางหนึ่ง	1	2	3	4	5
13	หากฉันทำอะไรผิดพลาดสักอย่างหนึ่ง ผู้คนอาจจะเริ่มตั้งคำถามเกี่ยวกับทุกสิ่งที่ฉันทำ	1	2	3	4	5
14	สำหรับฉันแล้ว ความผิดพลาดคือความล้มเหลว	1	2	3	4	5
15	ความผิดพลาดในการพูดภาษาอังกฤษเป็นสัญญลักษณ์แห่งความโง่	1	2	3	4	5
16	หากฉันใช้ภาษาอังกฤษผิดอย่างมาก ฉันรู้สึกหมดคุณค่า	1	2	3	4	5
17	หากฉันพูดภาษาอังกฤษไม่ได้ ฉันเป็นคนที่ล้มเหลว	1	2	3	4	5
18	ฉันรู้สึกไม่ดีถ้าฉันใช้ภาษาอังกฤษผิดพลาด	1	2	3	4	5

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19	หากมีใครพูดภาษาอังกฤษได้ดีกว่าฉัน ฉันจะรู้สึกล้มเหลวไปหมด	1	2	3	4	5
20	หากฉันล้มเหลวอะไรเพียงบางส่วน มันก็แย่เหมือนกับการล้มเหลวทั้งหมด	1	2	3	4	5
21	ฉันเกลียดที่ไม่สามารถทำสิ่งๆนั้นให้ได้ดีที่สุด	1	2	3	4	5
22	หากฉันทำอะไรไม่ได้เท่าคนอื่น ก็หมายความว่าฉันด้อยกว่าคนอื่น	1	2	3	4	5
23	หากฉันทำไม่ได้ดีตลอดเวลา ผู้คนจะไม่เคารพนับถือฉัน	1	2	3	4	5
24	หากฉันทำผิดพลาดน้อยลง ผู้คนจะชอบฉันมากขึ้น	1	2	3	4	5

ความคิดเกี่ยวกับความสมบูรณ์แบบ

25	ผู้คนตั้งมาตรฐานสูงมากสำหรับทักษะภาษาอังกฤษของฉัน	1	2	3	4	5
26	ผู้คนต้องการให้ฉันใช้ภาษาอังกฤษให้ดีที่สุด	1	2	3	4	5
27	ครอบครัวของฉันจะรู้สึกดีได้ก็ต่อเมื่อฉันทำอะไรได้ดีที่สุด	1	2	3	4	5
28	ผู้คนคาดหวังว่าฉันต้องมีความเป็นเลิศด้านภาษาอังกฤษ	1	2	3	4	5
29	เจ้านายและเพื่อนร่วมงานของฉันมีความคาดหวังสูงเกี่ยวกับภาษาอังกฤษของฉันมากกว่าที่ฉันคาดเสมอ	1	2	3	4	5
30	ถึงแม้ว่าฉันจะใช้ภาษาอังกฤษด้วยความระมัดระวัง แต่ฉันก็มักจะรู้สึกว่ามันไม่ถูกต้องนัก	1	2	3	4	5
31	ฉันมักจะมีข้อสงสัยเกี่ยวกับภาษาอังกฤษของฉัน แม้แต่ภาษาอังกฤษที่เรียบง่ายที่ฉันพูดในชีวิตประจำวัน	1	2	3	4	5

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32	ฉันมักจะพูดภาษาอังกฤษชักช้าไม่ทันใจเพราะว่าฉันมักพูดซ้ำไปซ้ำมา	1	2	3	4	5
33	ฉันใช้เวลาคิดนานเพื่อที่จะพูดภาษาอังกฤษให้ถูกต้อง	1	2	3	4	5

ความรู้สึกด้อย

34	คนอื่นไม่สนใจฉันเพราะภาษาอังกฤษของฉัน	1	2	3	4	5
35	คนอื่นหลีกเลี่ยงที่จะพูดภาษาอังกฤษกับฉันเพราะทักษะภาษาอังกฤษของฉัน	1	2	3	4	5
36	ความคิดเห็นหรือความคิดของฉันไม่ได้ถูกนำมาพิจารณาอย่างจริงจังเพราะทักษะภาษาอังกฤษของฉัน	1	2	3	4	5
37	คนอื่นปฏิบัติต่อฉันราวกับว่าฉันไม่รู้เรื่องรู้ราวอะไรเพราะทักษะภาษาอังกฤษของฉัน	1	2	3	4	5
38	คนอื่นดูถูกฉันเพราะทักษะภาษาอังกฤษของฉัน	1	2	3	4	5
39	ฉันรู้สึกว่าถูกคนอื่นปฏิเสธเพราะทักษะภาษาอังกฤษของฉัน	1	2	3	4	5
40	คนอื่นรู้สึกรำคาญภาษาอังกฤษของฉัน	1	2	3	4	5

ส่วนที่ 4: **ความวิตกกังวลในการใช้ภาษาต่างประเทศ**

คำสั่ง: โปรดประเมินแต่ละข้อความต่อไปนี้ ด้วยการเลือกวงกลมล้อมรอบหมายเลขที่แสดงความเห็นด้วย/ไม่เห็นด้วยของท่านต่อข้อความแต่ละข้อได้ดีที่สุด ดังนี้

1 = ไม่เห็นด้วยอย่างยิ่ง 2 = ไม่เห็นด้วย 3 = ไม่แน่ใจ 4 = เห็นด้วย 5 = เห็นด้วยอย่างยิ่ง

1	ฉันไม่เคยรู้สึกมั่นใจในตัวเองเลยเมื่อพูดภาษาอังกฤษ	1	2	3	4	5
2	ฉันสั่นเมื่อรู้ว่ากำลังจะต้องพูดภาษาอังกฤษ	1	2	3	4	5
3	ฉันกังวลใจเมื่อฉันไม่เข้าใจสิ่งที่คนอื่นพูดในภาษาอังกฤษ	1	2	3	4	5
4	ฉันคิดอยู่เสมอว่าคนอื่นเก่งภาษาอังกฤษมากกว่าฉัน	1	2	3	4	5
5	ปกติแล้วฉันรู้สึกสบายใจระหว่างการสนทนาภาษาอังกฤษ	1	2	3	4	5
6	ฉันรู้สึกสติแตกเมื่อต้องพูดภาษาอังกฤษโดยไม่ได้เตรียมตัวมาก่อน	1	2	3	4	5
7	ฉันกังวลใจกับผลลัพธ์ หากฉันไม่สามารถสื่อสารกับคนอื่นเป็นภาษาอังกฤษได้	1	2	3	4	5
8	ฉันไม่เข้าใจว่าทำไมคนบางคนถึงรู้สึกไม่ชอบภาษาอังกฤษ	1	2	3	4	5
9	เวลาที่ฉันพูดภาษาอังกฤษ ฉันมักจะกระวนกระวายใจจนนึกคำศัพท์หรือเรื่องที่จะพูดไม่ออก	1	2	3	4	5
10	ฉันรู้สึกอายที่จะแสดงความคิดเห็นในห้องเรียนหรือที่ประชุมเป็นภาษาอังกฤษโดยสมัครใจ	1	2	3	4	5
11	ฉันไม่รู้สึกกังวลใจอะไรที่จะพูดภาษาอังกฤษกับเจ้าของภาษา	1	2	3	4	5
12	ฉันมักผิดหวังกับตัวเองเมื่อฉันไม่เข้าใจในสิ่งที่คนอื่นกำลังแก้ไขคำผิดในภาษาอังกฤษของฉัน	1	2	3	4	5
13	ถึงแม้ว่าฉันจะเตรียมตัวมาดี แต่ฉันก็ยังรู้สึกกังวลใจในภาษาอังกฤษของฉัน	1	2	3	4	5
14	ฉันรู้สึกมั่นใจเมื่อฉันพูดภาษาอังกฤษ	1	2	3	4	5

15	ฉันกลัวว่าคนที่ฉันพูดภาษาอังกฤษด้วยจะคอยจ้องแก้ไขภาษาอังกฤษของฉันทุกครั้งที่ฉันพูดผิด	1	2	3	4	5
16	ฉันรู้สึกใจเต้นแรงเมื่อต้องพูดภาษาอังกฤษกับคนอื่น	1	2	3	4	5
17	ยิ่งฉันเรียนภาษาอังกฤษมากขึ้นเท่าไหร่ยิ่งทำให้ฉันสับสนมากขึ้นเท่านั้น	1	2	3	4	5
18	ฉันมักจะรู้สึกว่าคนอื่นพูดภาษาอังกฤษได้ดีกว่าฉัน	1	2	3	4	5
19	ฉันรู้สึกประหม่ามากที่จะต้องพูดภาษาอังกฤษต่อหน้าคนอื่น	1	2	3	4	5
20	ฉันรู้สึกว่าชั้นเรียน/การประชุมที่เป็นภาษาอังกฤษดำเนินไปอย่างรวดเร็วจนฉันตามไม่ทัน	1	2	3	4	5
21	ฉันรู้สึกเครียดและกังวลในชั้นเรียน/การประชุมที่เป็นภาษาอังกฤษมากกว่าชั้นเรียน/การประชุมอื่น	1	2	3	4	5
22	ฉันรู้สึกกังวลและสับสนเมื่อต้องพูดภาษาอังกฤษในชั้นเรียน/การประชุมที่เป็นภาษาอังกฤษ	1	2	3	4	5
23	เมื่อฉันต้องเข้าชั้นเรียน/การประชุมที่เป็นภาษาอังกฤษ ฉันรู้สึกมั่นใจและผ่อนคลายมาก	1	2	3	4	5
24	ฉันรู้สึกกังวลใจหากฉันไม่เข้าใจทุกคำที่คนอื่นพูดในภาษาอังกฤษ	1	2	3	4	5
25	ฉันรู้สึกหนักใจกับกฎไวยากรณ์ต่างๆที่ต้องเรียนรู้เพื่อที่จะพูดภาษาอังกฤษ	1	2	3	4	5
26	ฉันกลัวว่าคนอื่นจะหัวเราะเยาะฉันเมื่อฉันพูดภาษาอังกฤษ	1	2	3	4	5
27	ฉันสบายอกสบายใจเมื่ออยู่ท่ามกลางเจ้าของภาษาอังกฤษ	1	2	3	4	5

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28	ฉันกังวลใจเมื่อถูกถามคำถามภาษาอังกฤษที่ฉันไม่ได้เตรียมตัวตอบมาล่วงหน้า	1	2	3	4	5

ส่วนที่ 5: **การรับรู้ความสามารถของตนเอง**

คำสั่ง: โปรดประเมินแต่ละข้อความต่อไปนี้ ด้วยการเลือกวงกลมล้อมรอบหมายเลขที่อธิบายความเห็นของท่านเกี่ยวกับความจริงของข้อความได้ดีที่สุด ดังนี้

1 = ไม่จริงเลย 2 = ไม่จริง 3 = ไม่แน่ใจ 4 = จริง 5 = จริงอย่างยิ่ง

1	ฉันสามารถจัดการแก้ไขปัญหาภาษาอังกฤษของฉันได้เสมอหากฉันพยายามอย่างมากพอ	1	2	3	4	5
2	หากมีคนไม่เข้าใจภาษาอังกฤษของฉัน ฉันสามารถหาวิธีพูดสิ่งที่ฉันต้องการพูดออกไปได้	1	2	3	4	5
3	มันง่ายสำหรับฉันที่จะเกาะติดกับสิ่งที่ฉันต้องการสื่อสาร และสื่อสารออกไปได้สำเร็จ	1	2	3	4	5
4	ฉันมั่นใจว่าฉันจะรับมือกับการสนทนาภาษาอังกฤษที่ไม่ได้คาดคิดมาก่อน	1	2	3	4	5
5	ต้องขอบคุณความสามารถพิเศษของฉันที่ทำให้ฉันรู้วิธีรับมือกับการสนทนาภาษาอังกฤษที่ไม่ได้คาดคิดมาก่อน	1	2	3	4	5
6	ฉันสามารถแก้ไขปัญหาการสื่อสารภาษาอังกฤษได้ หากฉันใส่ความพยายามที่จำเป็นมากเพียงพอ	1	2	3	4	5

7	ฉันสงบสติอารมณ์ได้เมื่อเจอปัญหาในการสื่อสารภาษาอังกฤษ เพราะฉันรู้ว่าฉันสามารถพึ่งพาความสามารถของฉันในการรับมือกับปัญหาต่างๆได้	1	2	3	4	5
8	เมื่อฉันต้องเผชิญกับปัญหาในการสื่อสารภาษาอังกฤษ ฉันมักจะสามารถหาวิธีแก้ไขได้หลายวิธี	1	2	3	4	5
9	หากฉันมีปัญหาในการสื่อสารภาษาอังกฤษ ฉันสามารถหาวิธีแก้ไขได้เสมอ	1	2	3	4	5
10	ในการสนทนาภาษาอังกฤษ ฉันมักจะเอาตัวรอดได้เสมอ	1	2	3	4	5

ส่วนที่ 6: **ความคล่องของการใช้ภาษา**

คำสั่ง: โปรดประเมินระดับความสามารถในการพูดภาษาอังกฤษของท่านในแต่ละด้าน ด้วยการเลือกวงกลมล้อมรอบหมายเลขที่อธิบายความสามารถของท่านเกี่ยวกับความคล่องของภาษาอังกฤษได้ดีที่สุด ดังนี้

1 = ระดับพื้นฐาน 2 = ระดับกลางล่าง 3 = ระดับกลางบน 4 = ระดับสูง 5 = ระดับสูงมาก

1	ความคล่อง (ไม่มีการหยุดพัก ลังเล และ พูดผิดพูดใหม่)	1	2	3	4	5
2	ไวยากรณ์ (ความถูกต้องแม่นยำ และ การใช้โครงสร้างประโยคได้หลากหลาย)	1	2	3	4	5
3	คำศัพท์ (การเลือกใช้คำถูกต้องเหมาะสม และ ความหลากหลายของการเลือกใช้คำ)	1	2	3	4	5
4	การออกเสียง (การลงเสียงหนักเบา จังหวะ และท่วงทำนอง)	1	2	3	4	5

5	ประสิทธิภาพการสื่อสาร (ความชัดเจนของความคิด และความเข้าใจ)	1	2	3	4	5
6	การจัดการหัวข้อและเนื้อหา (ความเกี่ยวข้องของหัวข้อและเนื้อหาที่พูด การให้รายละเอียดและยกตัวอย่างที่ครอบคลุมหัวข้อและเพียงพอ)	1	2	3	4	5
7	ความมั่นใจ (การพูดได้อย่างไม่วิตกกังวล)	1	2	3	4	5
8	การจัดระเบียบภาษา (การริเริ่มการสนทนา การสร้างประโยคใหม่ๆ การจบและการเชื่อมโยงความคิด)	1	2	3	4	5
9	กลยุทธ์การพูด (พูดได้แม้ไม่รู้คำศัพท์ด้วยการหาคำศัพท์อื่นมาใช้แทนคำที่ไม่รู้หรือไม่คุ้นเคย)	1	2	3	4	5
10	การจัดการเวลา (พูดให้เข้าใจได้ในเวลาที่เหมาะสม)	1	2	3	4	5

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Appendix D

Instrument Developers' Permission to Use the Scales

Letter of request to use the standardized scales

Dear…….,

I am writing to request your permission to use the ……. Scale which you developed in ….. Currently, I am a doctoral student in the Counseling Psychology program, Assumption University, Bangkok, Thailand, and have been working on my doctoral dissertation paper entitled, Mindfulness Effects on Foreign Language Anxiety.

I would appreciate it very much if you could also provide me some advice on the use of the instrument, its limitations and concerns, if any. You can contact me at my e-mail address: krukatenetpreeya@gmail.com or through my academic advisor Dr. Parvathy Varma at parvathyvarma@hotmail.com should you require further information about me or my research project.

Thank you very much in advance for your time and consideration on the above matter. I look forward to hearing from you at your earliest convenience.

Sincerely yours,

Netpreeya Choomchaiyo

Request a permission to use the scale for research study

Standard Scales	Scale Developers	Contact	remark
Five Facet Mindfulness Questionnaire (FFMQ)	Dr. Ruth Baer	rbaer@email.uky.edu	Permission is not required.
Perfectionism Inventory (PI)	Dr. Robert W Hill	hillrw@appstate.edu	Permission granted
Frost Multidimensional Perfectionism Scale (FMPS)	Dr. Randy O. Frost	rfrost@*email*.smith.edu.	Permission is not required
Perceived Language Discrimination Scale	Dr. Meifen Wei	wei@iastate.edu	Permission is not required
Foreign Language Classroom Anxiety Scale (FLCAS)	Dr. Elaine K Horwitz	horwitz@austin.utexas.edu	Permission granted
General Self-Efficacy Scale (GSE)	Dr. Ralf Schwarzer	www.Ralfschwarzer.de health@zedat.fu-berlin.*de*	Permission is not required.
Speaking Ability Self-Assessment (SASA)	Dr. Esmat Babaii	ebabaii@gmail.com	Permission is not required.

Request a permission to use the Five Facet Mindfulness Questionnaire (FFMQ) for research study

Netpreeya Choomchaiyo <krukatenetpreeya@gmail.com> Wed, Jul 17, 2019, 12:32 PM

to rbaer, parvathy, Dr

Dear Dr. Baer,

I am writing to request your permission to use the Five Facet Mindfulness Questionnaire (FFMQ) which you developed. Currently, I am a doctoral student in the Counseling Psychology program, Assumption University, Bangkok, Thailand, and have been working on my doctoral dissertation paper entitled, Mindfulness Effects on Foreign Language Anxiety.

I would appreciate it very much if you could also provide me some advice on the use of the instrument, its limitations and concerns, if any. You can contact me at my e-mail address: krukatenetpreeya@gmail.com or through my academic advisor Dr. Parvathy Varma at parvathyvarma@hotmail.com should you require further information about me or my research project.

Thank you very much in advance for your time and consideration on the above matter. I look forward to hearing from you at your earliest convenience.

Sincerely yours,

Netpreeya Choomchaiyo

Baer, Ruth <rbaer@email.uky.edu> Fri, Nov 8, 2019, 9:39 PM

to me

Dear Netpreeya,

You're welcome to use the FFMQ. Permission is not required.

Best of luck with your project.

Ruth Baer

Re: Request a permission to use Perfectionism Inventory (PI) for research study

Bob Hill <hillrw@appstate.edu>

Thu 7/18/2019 12:27 AM

PI.questionnaire w blanks.doc 45 KB

Perfectionism Inventory Scoring Template.4.xls 61 KB

Perfection.Inventory JPA.pdf 136 KB

Show all 3 attachments (243 KB)

Netpreeya, I appreciate your interest in the Perfectionism Inventory for your research.
I am attaching the measure as a Word file with scoring directions.
I am also attaching an Excel file you can use to take or administer the PI. You can also click on Results tab for scale scores to be calculated automatically.
Also attached is an article describing the PI and psychometric properties.
Best wishes with your research,
Bob Hill

On Wed, Jul 17, 2019 at 2:44 AM Netpreeya Musigchai <krukate@hotmail.com> wrote:

Dear Dr. Robert W. Hill,

I am writing to request your permission to use the Perfectionism Inventory (PI) which you and colleagues developed in 2004. Currently, I am a doctoral student in the Counseling Psychology program, Assumption University, Bangkok, Thailand, and have been working on my doctoral dissertation paper entitled, Mindfulness Effects on Foreign Language Anxiety.

I would appreciate it very much if you could also provide me some advice on the use of the instrument, its limitations and concerns, if any. You can contact me at my e-mail address: krukatenetpreeya@gmail.com or through my academic advisor Dr. Parvathy Varma at parvathyvarma@hotmail.comshould you require further information about me or my research project.

Thank you very much in advance for your time and consideration on the above matter. I look forward to hearing from you at your earliest convenience.

Sincerely yours,

Netpreeya Choomchaiyo

Sent from Mail for Windows 10

--

Robert Hill, Ph.D.
Ombudsperson
Appalachian State University
Boone, NC 28608
Office: 828-262-2559

Request a permission to use the Frost Multidimensional Perfectionism Scale (FMPS) for research study

Netpreeya Choomchaiyo <krukatenetpreeya@gmail.com>
to rfrost, parvathy, Dr

Wed, Jul 17, 2019, 1:23 PM

Dear Dr. Randy O. Frost,

I am writing to request your permission to use the Frost Multidimensional Perfectionism Scale (FMPS) which you developed in 1990. Currently, I am a doctoral student in the Counseling Psychology program, Assumption University, Bangkok, Thailand, and have been working on my doctoral dissertation paper entitled, Mindfulness Effects on Foreign Language Anxiety.

I would appreciate it very much if you could also provide me some advice on the use of the instrument, its limitations and concerns, if any. You can contact me at my e-mail address: krukatenetpreeya@gmail.com or through my academic advisor Dr. Parvathy Varma at parvathyvarma@hotmail.com should you require further information about me or my research project.

Thank you very much in advance for your time and consideration on the above matter. I look forward to hearing from you at your earliest convenience.

Sincerely yours,

Netpreeya Choomchaiyo

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request a permission to use the Perceived Language Discrimination Scale (PLD) for research study

Netpreeya Choomchaiyo <krukatenetpreeya@gmail.com> Wed, Jul 17, 2019, 12:26 PM

to wei, parvathy, Dr

Dear Dr. Meifen Wei,

I am writing to request your permission to use the Perceived Language Discrimination Scale which you developed in 2012. Currently, I am a doctoral student in the Counseling Psychology program, Assumption University, Bangkok, Thailand, and have been working on my doctoral dissertation paper entitled, Mindfulness effects on foreign language anxiety.

I would appreciate it very much if you could also provide me some advice on the use of the instrument, its limitations and concerns, if any. You can contact me at my e-mail address: krukatenetpreeya@gmail.com or through my academic advisor Dr. Parvathy Varma at parvathyvarma@hotmail.com should you require further information about me or my research project.

Thank you very much in advance for your time and consideration on the above matter. I look forward to hearing from you at your earliest convenience.

Sincerely yours,

Netpreeya Choomchaiyo

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request a permission to use the Foreign Language Classroom Anxiety Scale (FLCAS) for research study

On Jul 17, 2019, at 1:13 AM, Netpreeya Choomchaiyo <krukatenetpreeya@gmail.com> wrote:

Dear Dr. Elaine K. Horwitz,

I am writing to request your permission to use the Foreign Language Classroom Anxiety Scale (FLCAS) which you and colleagues developed in 1986. Currently, I am a doctoral student in the Counseling Psychology program, Assumption University, Bangkok, Thailand, and have been working on my doctoral dissertation paper entitled, Mindfulness Effects on Foreign Language Anxiety.

I would appreciate it very much if you could also provide me some advice on the use of the instrument, its limitations and concerns, if any. You can contact me at my e-mail address: krukatenetpreeya@gmail.com or through my academic advisor Dr. Parvathy Varma at parvathyvarma@hotmail.com should you require further information about me or my research project.

Thank you very much in advance for your time and consideration on the above matter. I look forward to hearing from you at your earliest convenience.

Sincerely yours,

Netpreeya Choomchaiyo

Netpreeya Choomchaiyo Wed, Jul 17, 1:13 PM

Dear Dr. Elaine K. Horwitz, I am writing to request your permission to use the Foreign Language Classroom Anxiety Scale (FLCAS) which you and colleagues develop

Horwitz, Elaine K horwitz@austin.utexas.edu via utexas.onmicrosoft.com Wed, Jul 17, 9:16 PM

to me

Subject to the usual requirements for acknowledgment, I 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

request a permission to use the General Self-efficacy Scale (GSE) for research study

Wed, Jul 17, 2:12 PM

Netpreeya Choomchaiyo <krukatenetpreeya@gmail.com>
to health, parvathy, Dr

Wed, Jul 17, 2019, 1:47 PM

Dear Prof. Dr. Ralf Schwarzer,

I am writing to request your permission to use the General Self-efficacy Scale (GSE) which you developed in 1995. Currently, I am a doctoral student in the Counseling Psychology program, Assumption University, Bangkok, Thailand, and have been working on my doctoral dissertation paper entitled, Mindfulness Effects on Foreign Language Anxiety.

I would appreciate it very much if you could also provide me some advice on the use of the instrument, its limitations and concerns, if any. You can contact me at my e-mail address: krukatenetpreeya@gmail.com or through my academic advisor Dr. Parvathy Varma at parvathyvarma@hotmail.com should you require further information about me or my research project.

Thank you very much in advance for your time and consideration on the above matter. I look forward to hearing from you at your earliest convenience.

Sincerely yours,

Netpreeya Choomchaiyo

Schwarzer, Ralf <ralf.schwarzer@fu-berlin.de>
to me, health@zedat.fu-berlin.de, parvathy, Dr

see

http://www.psyc.de/WORDPRESS/wordpress/requests/

Prof. Dr. Ralf Schwarzer
Freie Universität Berlin, Psychology
Habelschwerdter Allee 45
14195 Berlin, Germany
Email | ralf.schwarzer@fu-berlin.de
WEB | http://my.psyc.de
ORCID | http://orcid.org/0000-0002-0069-3826
Twitter | https://twitter.com/schwarzer1
BLOG | https://theemeritus.wordpress.com/
Research in Wroclaw, Poland | http://www.care-beh.eu/

Request a permission to use the Speaking Ability Self-Assessment (SASA) for research study

Inbox

Netpreeya Choomchaiyo 1:00 PM (2 hours ago)

Dear Dr. Esmat Babaii, I am writing to request your permission to use the Speaking Ability Self-Assessment (SASA) which you developed in 2015. Currently, I am a

Esmat Babaii 2:37 PM (1 hour ago)

to me

Dear N. Choomchaiyo,

There is no need to seek permission for using the instrument. As we noted in the article, some familiarity with the criteria before responding the questionnaire would foster better results. I know of no other limitations. Unless there might be some culture-specific factors like modesty that may lead students to under-assess their abilities. You know your culture better and you may decide what to do so that reliable self-assessment is obtained.

Good luck with your research
Esmat Babaii

--
Esmat Babaii
Associate professor of applied linguistics
Kharazmi University
Tehran, Iran

https://www.researchgate.net/profile/Esmat_Babaii

https://www.linkedin.com/in/esmat-babaii

https://orcid.org/0000-0001-9998-8247

http://lh.khu.ac.ir/cv/436/

Appendix E

Letter of Request for Data Collection and Conducting Experiments

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มหาวิทยาลัยอัสสัมชัญ
ASSUMPTION UNIVERSITY

Ref: 11/2020

Graduate School of Human Sciences
Assumption University
Hua Mak
Bangkapi
Bangkok 10240

January 13, 2020

Vice President, Human Resource Management,
and President – BCP Club
Bangchak Coporation PCL.
Head Office 2098 M. Tower Building,
8th Floor, Sukhumvit Road, Phrakhanong Tai,
Phrakhanong, Bangkok, 10260

Dear Director

I would like to introduce Mrs. Netpreeya Choomchaiyo who is our student in the Doctor of Philosophy Program in Counseling Psychology, Graduate School of Human Sciences, Assumption University. She is conducting a Dissertation on "THE INFLUENCES OF MINDFULNESS ON FOREIGN LANGUAGE FLUENCY, MEDIATED BY IRRATIONAL THOUGTHS, FOREIGN LANGUAGE ANXIETY AND SELF-EFFICACY ON THAI ENGLISH LEARNERS"

In this regard, Mrs. Netpreeya Choomchaiyo would like your kind permission to conduct the experimental research and collect data at your esteemed institute. Should you need more information, please contact her at email krukatenetpreeya@gmail.com

Thank you so much in anticipation of your positive reply relating to this request and her possible further information needs.

Sincerely yours,

Assoc. Prof. Dr. Suwattana Eamoraphan
Dean, Graduate School of Human Sciences

มหาวิทยาลัยอัสสัมชัญ
ASSUMPTION UNIVERSITY

Ref: 12/2020

Graduate School of Human Sciences
Assumption University
Hua Mak
Bangkapi
Bangkok 10240

January 13, 2020

Dean of Faculty of Science & Art
Burapha University, Chantaburi Campus
57 Moo1, Chonprathan Road, Tumbon Kamong,
Tamai Distric, Chantaburi, 22170

Dear Dean

I would like to introduce Mrs. Netpreeya Choomchaiyo who is our student in the Doctor of Philosophy Program in Counseling Psychology, Graduate School of Human Sciences, Assumption University. She is conducting a Dissertation on "THE INFLUENCES OF MINDFULNESS ON FOREIGN LANGUAGE FLUENCY MEDIATED BY IRRATIONAL THOUGTHS, FOREIGN LANGUAGE ANXIETY AND SELF-EFFICACY ON THAI ENGLISH LEARNERS"

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Thank you so much in anticipation of your positive reply relating to this request and her possible further information needs.

Sincerely yours,

Assoc. Prof. Dr. Suwattana Eamoraphan
Dean, Graduate School of Human Sciences

มหาวิทยาลัยอัสสัมชัญ
ASSUMPTION UNIVERSITY

Ref: 13/2020

Graduate School of Human Sciences
Assumption University
Hua Mak
Bangkapi
Bangkok 10240

January 13, 2020

Director, Human Resource Management,
SCG Chemicals Co., Ltd.
Head Quarter, 1 Siam Cement Road,
Bangsue, Bangkok, 10800

Dear Director

I would like to introduce Mrs. Netpreeya Choomchaiyo who is our student in the Doctor of Philosophy Program in Counseling Psychology, Graduate School of Human Sciences, Assumption University. She is conducting a Dissertation on "THE INFLUENCES OF MINDFULNESS ON FOREIGN LANGUAGE FLUENCY MEDIATED BY IRRATIONAL THOUGTHS, FOREIGN LANGUAGE ANXIETY AND SELF-EFFICACY ON THAI ENGLISH LEARNERS"

In this regard, Mrs. Netpreeya Choomchaiyo would like your kind permission to conduct the experimental research and collect data at your esteemed institute. Should you need more information, please contact her at email krukatenetpreeya@gmail.com

Thank you so much in anticipation of your positive reply relating to this request and her possible further information needs.

Sincerely yours,

Suwattana Eamoraphan

Assoc. Prof. Dr. Suwattana Eamoraphan
Dean, Graduate School of Human Sciences

มหาวิทยาลัยอัสสัมชัญ
ASSUMPTION UNIVERSITY

Ref: 14/2020

Graduate School of Human Sciences
Assumption University
Hua Mak
Bangkapi
Bangkok 10240

January 13, 2020

President (Mr. Chatchai Sirilai),
Government Housing Bank Head Office.
63 Rama IX Soi 7, Huai Khwang, Bangkok 10310

Dear President,

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มหาวิทยาลัยอัสสัมชัญ
ASSUMPTION UNIVERSITY

Ref: 15/2020

Graduate School of Human Sciences
Assumption University
Hua Mak
Bangkapi
Bangkok 10240

January 13, 2020

Dean of Faculty of Pharmacy
Silpakorn University, Sanam Chandra Palace Campus
6 Rajamankha Nai Road, Phra Pathom Chedi,
Muang, Nakorn Pathom 73000

Dear Dean

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Sincerely yours,

Assoc. Prof. Dr. Suwattana Eamoraphan
Dean, Graduate School of Human Sciences

Appendix F

Exploratory Factor Analysis, Item Statistics and Parceling

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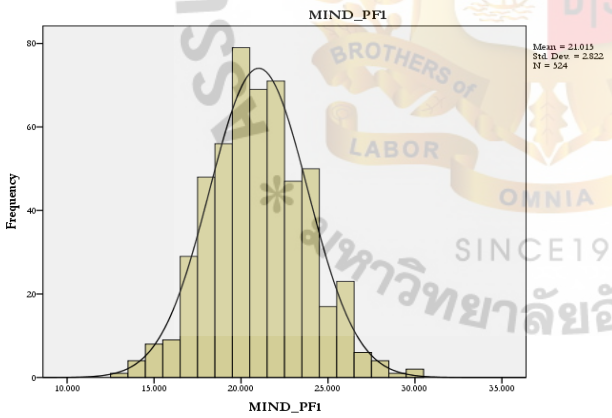
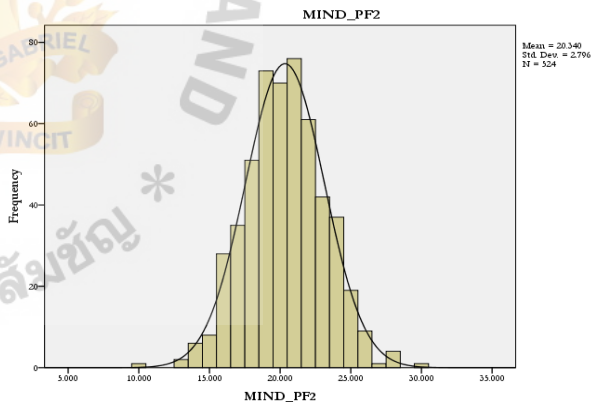
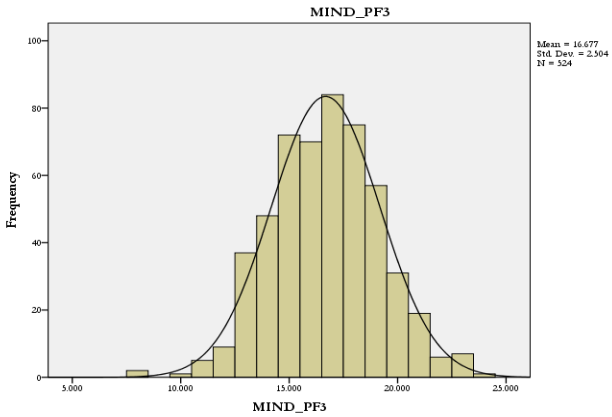
Mindfulness (MIND)

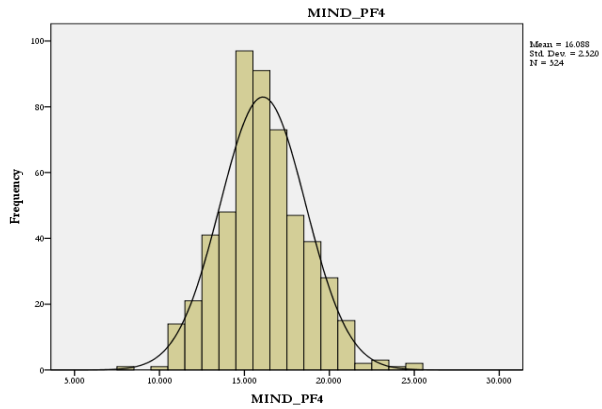
Descriptive Statistics of Item parcels MINDFULNESS

	MIND_PF1	MIND_PF2	MIND_PF3	MIND_PF4
N Valid	524	524	524	524
Missing	0	0	0	0
Mean	21.01527	20.33969	16.67748	16.08779
Std. Deviation	2.822295	2.795631	2.504487	2.519508
Skewness	0.153	0.034	0.008	0.278
Std. Error of Skewness	0.107	0.107	0.107	0.107
Kurtosis	0.033	0.192	0.120	0.356
Std. Error of Kurtosis	0.213	0.213	0.213	0.213
Minimum	13.000	10.000	8.000	8.000
Maximum	30.000	30.000	24.000	25.000









Exploratory factor analysis for mindfulness items - All items

Rotated Component Matrix[a]

Sno	Item No	Items	Component 1	2	3	4	5	6	**h2**
1	23	MIND23 I find myself doing things without paying attention.	0.798						0.671
2	22	MIND22 I do jobs or tasks automatically without being aware of what I'm doing.	0.793						0.649
3	17	MIND17 I rush through activities without being really attentive to them.	0.737						0.574
4	12	MIND12 It seems I am "running on automatic" without much awareness of what I'm doing.	0.700						0.450
5	8	MIND8 I find it difficult to stay focused on what's happening in the present.	0.548						0.424
6	11	MIND11 When I have a sensation in my body, it's difficult for me to describe it	0.515						0.655

		because I can't find the right words.		
7	9	MIND9 When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.	0.787	0.424
8	21	MIND21 When I have distressing thoughts or images, I just notice them and let them go.	0.777	0.364
9	13	MIND13 When I have distressing thoughts or images, I feel calm soon after.	0.777	0.614
10	18	MIND18 When I have distressing thoughts or images, I am able just to notice them without reacting.	0.692	0.557
11	10	MIND10 I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	0.774	0.641
12	15	MIND15 I notice the smells and aromas of things.	0.748	0.566

13	6	MIND6 I pay attention to sensations, such as the wind in my hair or sun on my face.		0.695			0.642
14	20	MIND20 I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	0.318	0.464			0.516
15	21	MIND2 I can easily put my beliefs, opinions, and expectations into words.			0.838		0.671
16	1	MIND1 I'm good at finding words to describe my feelings.			0.828		0.745
17	16	MIND16 Even when I'm feeling terribly upset, I can find a way to put it into words.		0.398	0.539		0.636
18	3	MIND3 I watch my feelings without getting lost in them.	0.361		0.427	0.364	0.761
19	24	MIND24 I disapprove of myself when I have irrational ideas.				0.728	0.580
20	19	MIND19 I think some of my emotions are bad or inappropriate and I shouldn't feel them.				0.701	0.540

21	14	MIND14 I tell myself that I shouldn't be thinking the way I'm thinking.				0.610	0.334	0.653
22	7	MIND7 I make judgments about whether my thoughts are good or bad.	0.333			0.491		0.561
23	4	MIND4 I tell myself I shouldn't be feeling the way I'm feeling.				0.387	0.683	0.563
24	5	MIND5 It's hard for me to find the words to describe what I'm thinking.	0.437		0.463		0.472	0.677

Extraction Method: Principal Component Analysis. Rotation Varimax. 58.889% of variance explained

Rotation Method: Varimax with Kaiser Normalization.

Exploratory factor analysis for mindfulness items – 22 items (item no. 5 and 11 removed)

Rotated Component Matrix[a]

Sno	item no	Items	Component 1	2	3	4	5	h2
1	23	MIND23 I find myself doing things without paying attention.	0.822					0.700
2	22	MIND22 I do jobs or tasks automatically without being aware of what I'm doing.	0.788					0.650

3	17	MIND17 I rush through activities without being really attentive to them.	0.760			0.604
4	12	MIND12 It seems I am “running on automatic” without much awareness of what I’m doing.	0.662			0.555
5	8	MIND8 I find it difficult to stay focused on what’s happening in the present.	0.532			0.398
6	21	MIND21 When I have distressing thoughts or images, I just notice them and let them go.		0.785		0.679
7	13	MIND13 When I have distressing thoughts or images, I feel calm soon after.		0.782		0.662
8	9	MIND9 When I have distressing thoughts or images, I “step back” and am aware of the thought or image without getting taken over by it.		0.772		0.627
9	18	MIND18 When I have distressing thoughts or images, I am able just to notice them without reacting.		0.703		0.567
10	10	MIND10 I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.			0.768	0.642

11	15	MIND15 I notice the smells and aromas of things.		0.745		0.641
12	6	MIND6 I pay attention to sensations, such as the wind in my hair or sun on my face.		0.678		0.529
13	20	MIND20 I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	0.314	0.458		0.362
14	2	MIND2 I can easily put my beliefs, opinions, and expectations into words.			0.860	0.784
15	1	MIND1 I'm good at finding words to describe my feelings.			0.858	0.776
16	16	MIND16 Even when I'm feeling terribly upset, I can find a way to put it into words.		0.361	0.577	0.509
17	3	MIND3 I watch my feelings without getting lost in them.	0.362		0.415	0.386
18	14	MIND14 I tell myself that I shouldn't be thinking the way I'm thinking.				0.692 0.567
19	19	MIND19 I think some of my emotions are bad or inappropriate and I shouldn't feel them.				0.690 0.493

20	24	MIND24 I disapprove of myself when I have irrational ideas.		0.660	0.483
21	4	MIND4 I tell myself I shouldn't be feeling the way I'm feeling.		0.601	0.422
22	7	MIND7 I make judgments about whether my thoughts are good or bad.	0.320	0.497	0.413

Extraction Method: Principal Component Analysis. Rotation Varimax. 56.579% of variance explained

Rotation Method: Varimax with Kaiser Normalization.

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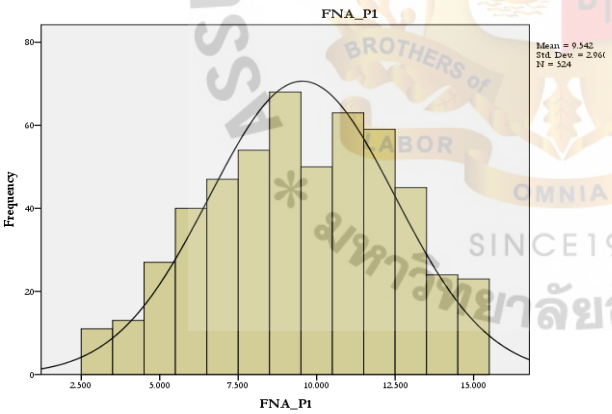
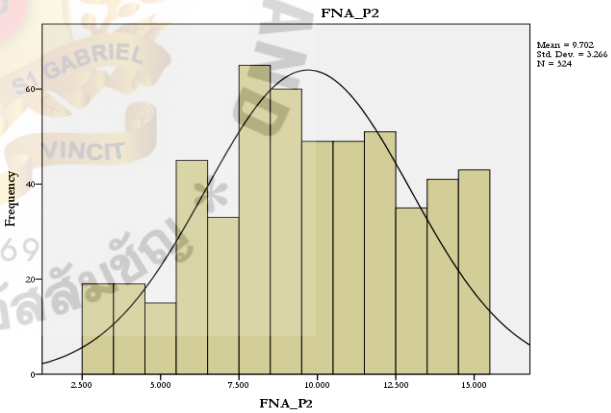
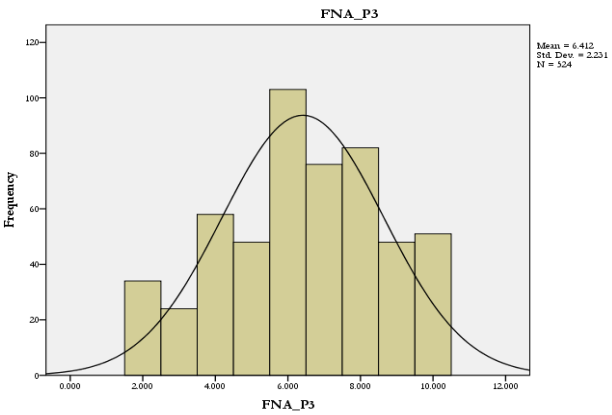
Fear of non-achievement (FNA)

Statistics

		FNA_P1	FNA_P2	FNA_P3
N	Valid	524	524	524
	Missing	0	0	0
Mean		9.54198	9.70229	6.41221
Std. Deviation		2.959922	3.266247	2.230915
Skewness		-0.132	-0.135	-0.225
Std. Error of Skewness		0.107	0.107	0.107
Kurtosis		-0.718	-0.807	-0.719
Std. Error of Kurtosis		0.213	0.213	0.213
Minimum		3.000	3.000	2.000
Maximum		15.000	15.000	10.000







Exploratory factor analysis for fear of non-achievement items

Rotated Component Matrix[a]

Sno	Item no	Items	Component	h2
1	4	NA4 I'm concerned with whether or not other people approve of my English skills.	0.851	0.724
2	3	NA3 I am sensitive to how others respond to my English skills.	0.846	0.716
3	8	NA8 I spend a great deal of time worrying about other people's opinion of me.	0.824	0.679
4	7	NA7 I am often concerned that people will take what I say in English the wrong way.	0.824	0.679
5	6	NA6 I am self-conscious about what others think of me.	0.801	0.642
6	5	NA5 I often don't say anything in English because I'm scared, I might say the wrong thing.	0.801	0.641
7	2	NA2 I compare my English skills to others and often feel inadequate.	0.773	0.597
8	1	NA1 I am over-sensitive to the comments of others.	0.595	0.354

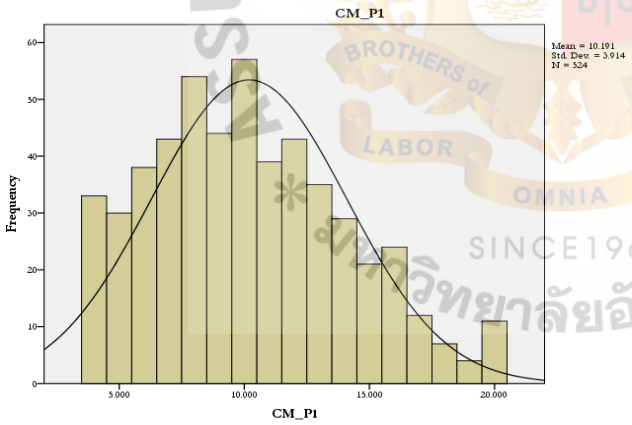
Extraction Method: Principal Component Analysis. Rotation Varimax. 62.906% of variance explained

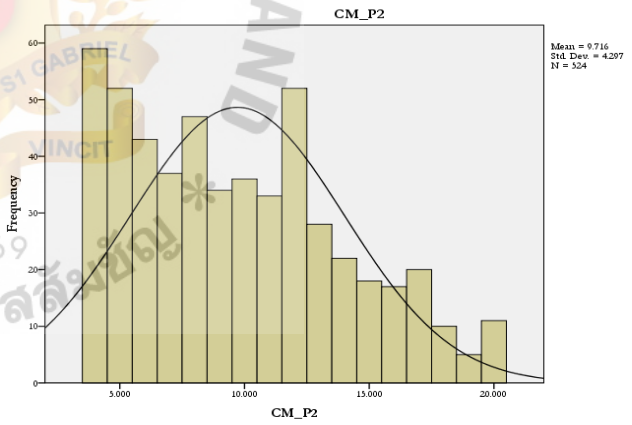
Rotation Method: Varimax with Kaiser Normalization.

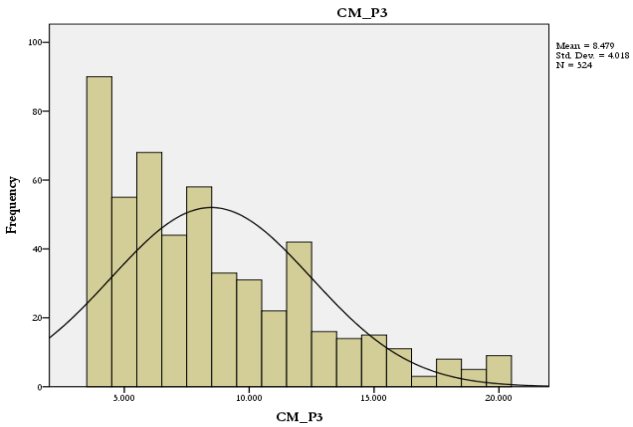
Concern for Mistakes (CM)

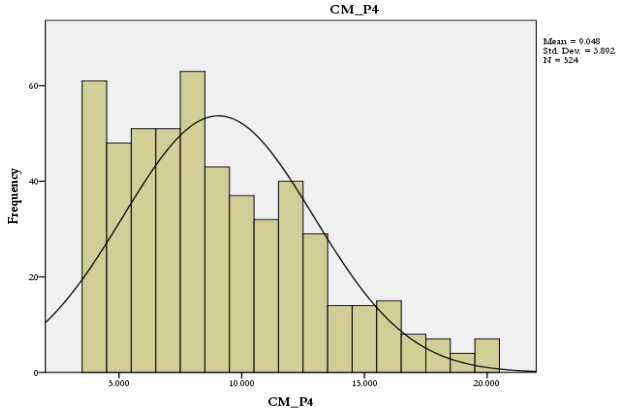
Statistics

		CM_P1	CM_P2	CM_P3	CM_P4
N	Valid	524	524	524	524
	Missing	0	0	0	0
Mean		10.19084	9.71565	8.47901	9.04771
Std. Deviation		3.914213	4.296967	4.018306	3.891897
Skewness		0.418	0.484	0.939	0.716
Std. Error of Skewness		0.107	0.107	0.107	0.107
Kurtosis		-0.440	-0.659	0.232	-0.097
Std. Error of Kurtosis		0.213	0.213	0.213	0.213
Minimum		4.000	4.000	4.000	4.000
Maximum		20.000	20.000	20.000	20.000









Exploratory factor analysis for concern over mistakes items

Rotated Component Matrix[a]

Sno	Item no	Items	Component 1	Component 2	h2
1	20	CM20 If I fail partly, it is as bad as being a complete failure.	0.781	0.327	0.717
2	15	CM15 Making mistakes in English is a sign of stupidity.	0.771	0.392	0.748
3	22	CM22 If I do not do as well as other people, it means I am an inferior human being.	0.760	0.321	0.680
4	16	CM16 If I make a serious mistake in English, I feel like I'm less of a person.	0.755	0.433	0.759
5	23	CM23 If I do not do well all the time, people will not respect me.	0.754		0.641
6	17	CM17 If I fail to speak English, I am a failure as a person.	0.751	0.362	0.696
7	19	CM19 If someone speak better English than I, then I feel like I failed the whole thing.	0.724	0.413	0.695
8	14	CM14 To me, a mistake equals failure.	0.686	0.455	0.678
9	18	CM18 I should be upset if I make a mistake in English.	0.639	0.469	0.629
10	21	CM21 I hate being less than best at things.	0.623		0.453
11	24	CM24 The fewer mistakes I make, the more people will like me.	0.567	0.301	0.412
12	10	CM10 I am particularly embarrassed by failure to speak English.	0.352	0.810	0.780
13	9	CM9 If I make mistakes in English, people might think less of me.	0.301	0.805	0.739

14	11	CM11 I over-react to making mistakes in English.	0.362	0.775	0.732
15	12	CM12 If someone points out a mistake I've made in English, I feel like I've lost that person's respect in some way.	0.396	0.727	0.685
16	13	CM13 If I mess up on one thing, people might start questioning everything I do.	0.402	0.694	0.644

Extraction Method: Principal Component Analysis. Rotation Varimax. 66.786% of variance

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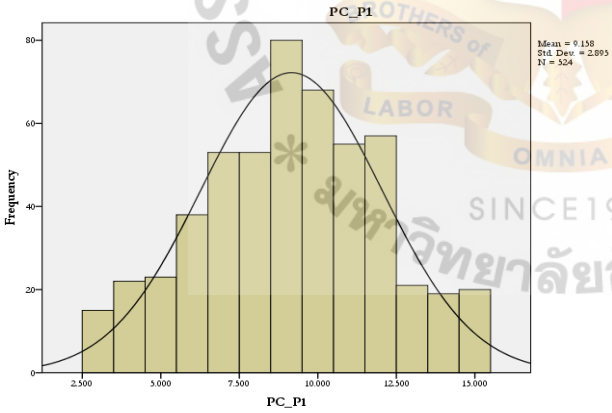
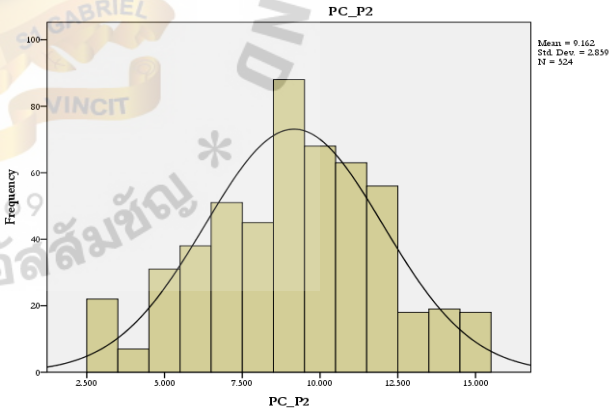
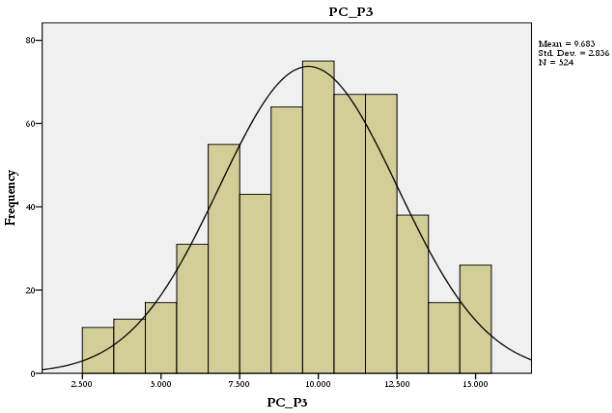
Perfectionistic Cognition (PC)

Statistics

		PC_P1	PC_P2	PC_P3
N	Valid	524	524	524
	Missing	0	0	0
Mean		9.15840	9.16221	9.68321
Std. Deviation		2.895191	2.859091	2.835655
Skewness		-0.076	-0.137	-0.219
Std. Error of Skewness		0.107	0.107	0.107
Kurtosis		-0.492	-0.395	-0.444
Std. Error of Kurtosis		0.213	0.213	0.213
Minimum		3.000	3.000	3.000
Maximum		15.000	15.000	15.000







Exploratory factor analysis for perfectionistic cognition items

Rotated Component Matrix[a]

Sno	Item no	Items	Component 1	Component 2	h2
1	28	PC28 People have expected excellence from me in English communication.	0.871		0.780
2	25	PC25 People set very high standards for my English skills.	0.816		0.680
3	26	PC26 People want me to do the best in English.	0.811		0.708
4	29	PC29 My boss and colleagues have always had higher expectations for my English than I have.	0.786		0.677
5	27	PC27 Only outstanding performance is good enough in my family.	0.577		0.385
6	32	PC32 I tend to get behind in my English communication because I repeat things over and over.		0.861	0.768
7	33	PC33 It takes me a long time to speak English “right”.		0.861	0.747
8	31	PC31 I usually have doubts about the simple everyday English I speak.		0.782	0.693
9	30	PC30 Even when I speak English very carefully, I often feel that it is not quite right.	0.343	0.722	0.639

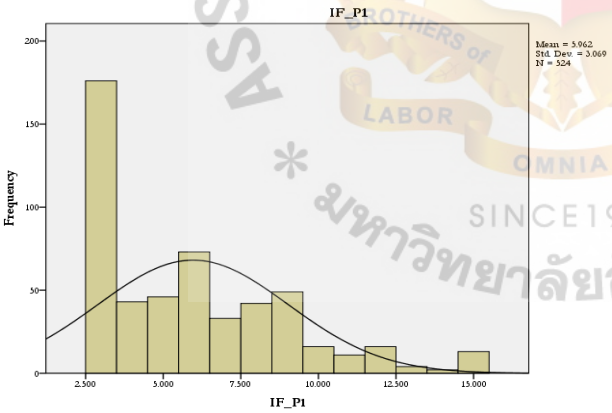
Extraction Method: Principal Component Analysis. Rotation Varimax. 67.520% of variance explained

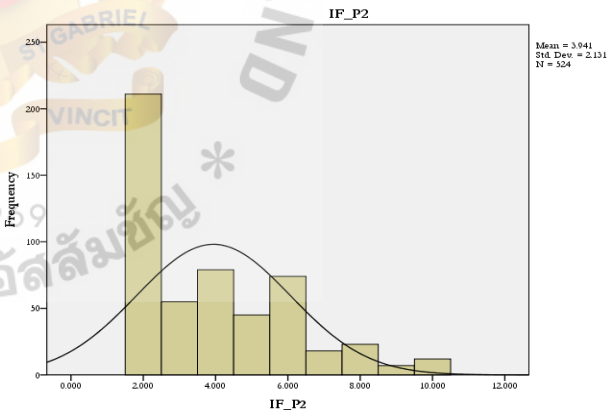
Rotation Method: Varimax with Kaiser Normalization.

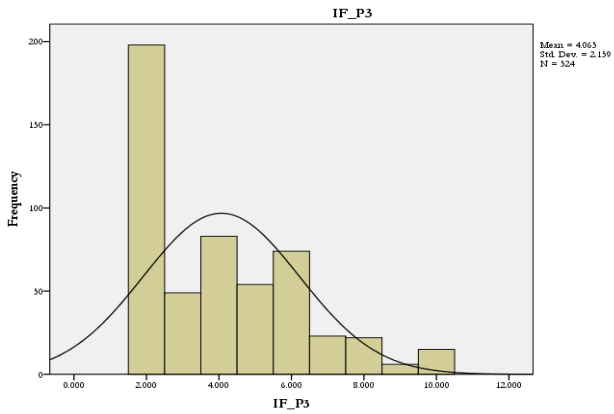
Inferiority feeling (INF)

Statistics

		INF_P1	INF_P2	INF_P3
N	Valid	524	524	524
	Missing	0	0	0
Mean		5.96183	3.94084	4.06489
Std. Deviation		3.069381	2.131062	2.158975
Skewness		0.985	0.940	0.869
Std. Error of Skewness		0.107	0.107	0.107
Kurtosis		0.397	0.078	0.000
Std. Error of Kurtosis		0.213	0.213	0.213
Minimum		3.000	2.000	2.000
Maximum		15.000	10.000	10.000







Exploratory factor analysis for inferiority feeling items

Rotated Component Matrix[a]

Sno	item no	Items	Component 1	h2
1	37	INF37 Others treat me as if I don't know anything because of my English.	0.916	0.647
2	39	INF39 I feel rejected by others because of my English.	0.913	0.729
3	38	INF38 Others look down on me because of my English.	0.913	0.744
4	36	INF36 My opinions or ideas are not taken seriously because of my English.	0.863	0.838
5	40	INF40 Others are annoyed by my English.	0.861	0.833
6	35	INF35 Others avoid talking to me because of my English.	0.854	0.834
7	34	INF34 Others ignore me because of my English.	0.804	0.742

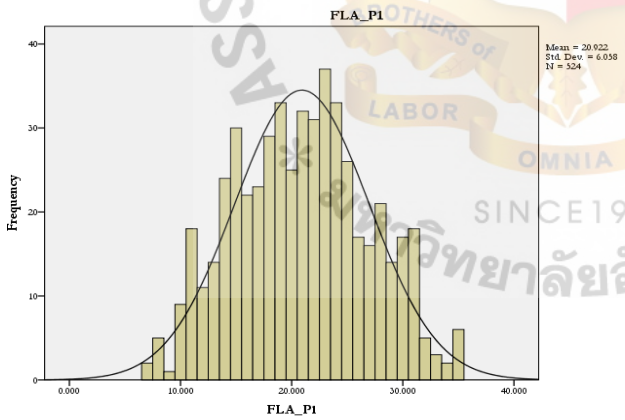
Extraction Method: Principal Component Analysis. Rotation Varimax. 76.662% of variance explained

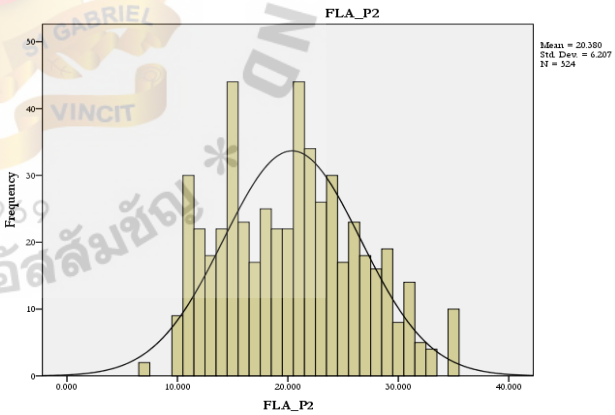
Rotation Method: Varimax with Kaiser Normalization.

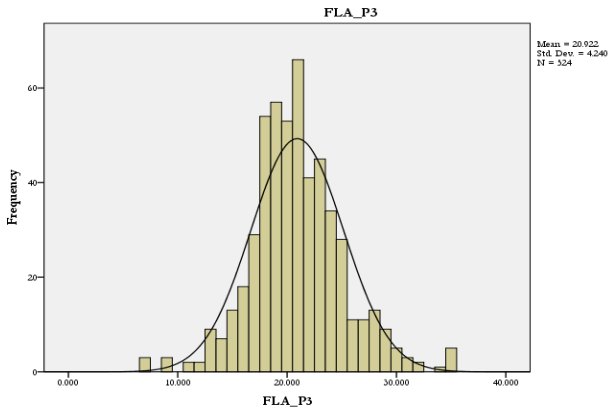
Foreign language anxiety (FLA)

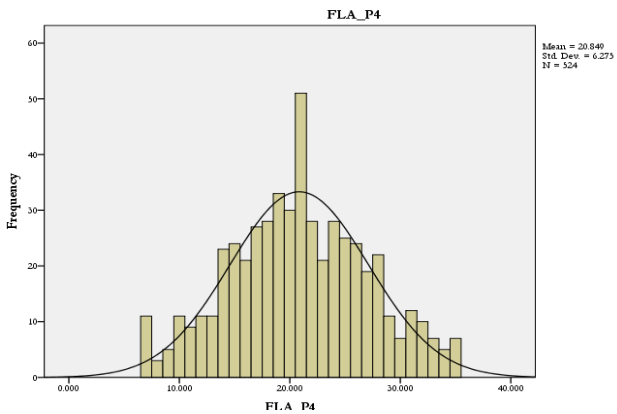
Statistics

		FLA_P1	FLA_P2	FLA_P3	FLA_P4
N	Valid	524	524	524	524
	Missing	0	0	0	0
Mean		20.92176	20.37977	20.92176	20.84924
Std. Deviation		6.057688	6.206982	4.239889	6.274640
Skewness		0.061	0.224	0.267	0.028
Std. Error of Skewness		0.107	0.107	0.107	0.107
Kurtosis		-0.625	-0.705	1.296	-0.391
Std. Error of Kurtosis		0.213	0.213	0.213	0.213
Minimum		7.000	7.000	7.000	7.000
Maximum		35.000	35.000	35.000	35.000









Exploratory factor analysis for foreign language anxiety items

Rotated Component Matrix[a]

Sno	Item No	Items	Component 1	Component 2	h2
1	19	FLA19 I feel very self-conscious about speaking English in front of others.	0.834		0.758
2	16	FLA16 I can feel my heart pounding when I'm going to speak English to others.	0.826		0.701
3	26	FLA26 I am afraid that the others will laugh at me when I speak English.	0.821		0.679
4	22	FLA22 I get nervous and confused when I am speaking English in class/meeting.	0.817		0.741
5	21	FLA21 I feel more tense and nervous in my English class/meeting than in the others.	0.800		0.701
6	20	FLA20 English class/meeting moves so quickly that I worry about getting left behind.	0.794		0.676
7	28	FLA28 I get nervous when asked questions in English which I haven't prepared in advance.	0.792		0.675
8	2	FLA2 I tremble when I know that I'm going to speaking English.	0.791		0.669
9	3	FLA3 It frightens me when I don't understand what other is saying English.	0.787		0.670
10	13	FLA13 Even if I am well prepared, I feel anxious about my English.	0.786		0.642

11	25	FLA25 I feel overwhelmed by the number of rules I have to learn to speak English.	0.785	0.646
12	1	FLA1 I never feel quite sure of myself when I am speaking English.	0.782	0.666
13	9	FLA9 When I speak English, I can get so nervous that I forget things I know.	0.776	0.652
14	18	FLA18 I always feel that the others speak English better than I do.	0.767	0.598
15	6	FLA6 I start to panic when I have to speak English without preparation.	0.764	0.618
16	10	FLA10 It embarrasses me to voluntarily give opinions in English in a class/meeting.	0.761	0.635
17	24	FLA24 I get nervous when I don't understand every word the English other says.	0.753	0.571
18	4	FLA4 I keep thinking that the others are better at English than me.	0.750	0.571
19	17	FLA17 The more I study English, the more confused I get.	0.743	0.552
20	7	FLA7 I worry about the consequences of failing my English communication.	0.742	0.566
21	15	FLA15 I am afraid that a person I speak English to is ready to correct every mistake I make.	0.706	0.516
22	12	FLA12 In an English conversation, I get upset when I don't understand what other is correcting.	0.677	0.469

23	23	FLA23 When I'm on my way to English class/meeting, I feel very sure and relaxed.	0.751	0.585
24	27	FLA27 I would probably feel comfortable around native speakers of English.	0.715	0.534
25	11	FLA11 I would not be nervous speaking English with native speakers.	0.699	0.519
26	5	FLA5 I am usually at ease during an English conversation.	0.695	0.518
27	14	FLA14 I feel confident when I speak English.	0.681	0.539
28	8	FLA8 I don't understand why some people get so upset over English.	0.446	0.270

Extraction Method: Principal Component Analysis. Rotation Varimax. 60.489% of variance explained

Rotation Method: Varimax with Kaiser Normalization.

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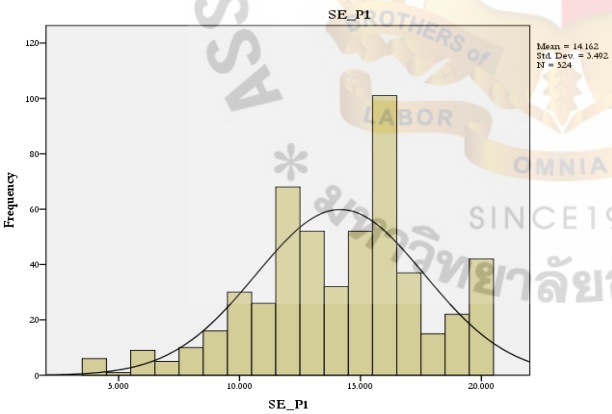
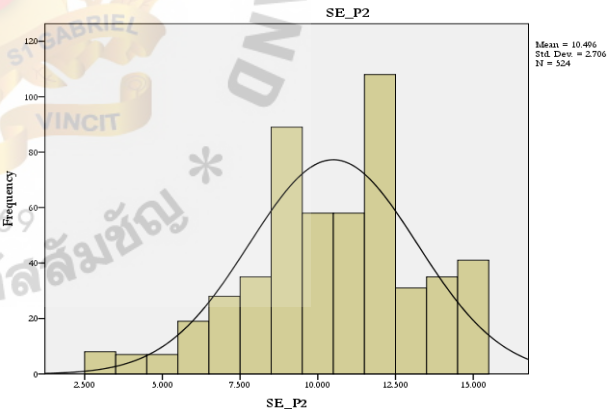
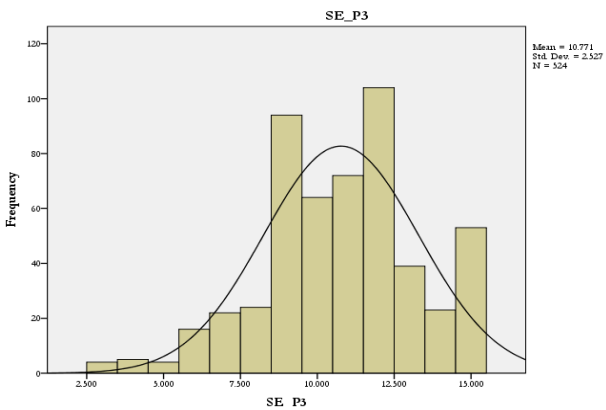
Self-efficacy (SE)

Statistics

		SE_P1	SE_P2	SE_P3
N	Valid	524	524	524
	Missing	0	0	0
Mean		14.16221	10.49618	10.77099
Std. Deviation		3.491922	2.705773	2.527296
Skewness		-0.401	-0.398	-0.329
Std. Error of Skewness		0.107	0.107	0.107
Kurtosis		-0.015	-0.066	0.078
Std. Error of Kurtosis		0.213	0.213	0.213
Minimum		4.000	3.000	3.000
Maximum		20.000	15.000	15.000







Exploratory factor analysis for self-efficacy items

Rotated Component Matrix[a]

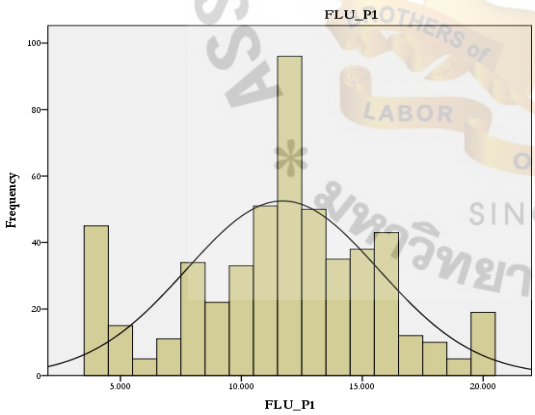
Sno	Item no	Items	Component 1	h2
1	7	SE7 I can remain calm when facing difficulties in an English conversation because I can rely on my coping abilities.	0.882	0.777
2	8	SE8 When I am confronted with a problem in an English communication, I can usually find several solutions.	0.880	0.774
3	4	SE4 I am confident that I could deal efficiently with unexpected English conversation.	0.870	0.757
4	9	SE9 If I am in trouble in an English communication, I can usually think of a solution.	0.867	0.752
5	10	SE10 In an English conversation I can usually handle whatever comes my way.	0.851	0.725
6	5	SE5 Thanks to my resourcefulness, I know how to handle unforeseen English conversation.	0.822	0.676
7	2	SE2 If someone doesn't understand my English, I can find the means and ways to say what I want.	0.814	0.663
8	3	SE3 It is easy for me to stick to my aims and accomplish my goals in English communication.	0.813	0.661
9	6	SE6 I can solve most problems if I invest the necessary effort in English communication.	0.789	0.623
10	1	SE1 I can always manage to solve my English problems if I try hard enough.	0.740	0.547

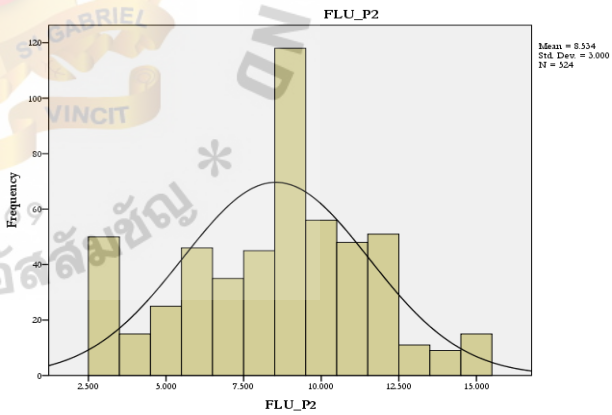
Extraction Method: Principal Component Analysis. Rotation Varimax. 69.558% of variance explained, Rotation Method: Varimax with Kaiser Normalization.

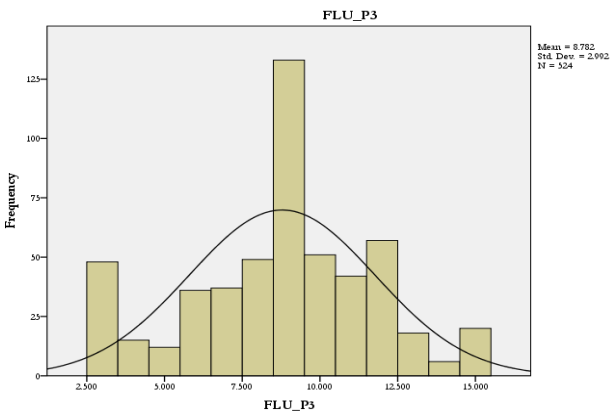
Foreign language fluency (FLU)

Statistics

		FLU_P1	FLU_P2	FLU_P3
N	Valid	524	524	524
	Missing	0	0	0
Mean		11.70229	8.53435	8.78244
Std. Deviation		3.981208	3.000440	2.991766
Skewness		-0.216	-0.165	-0.224
Std. Error of Skewness		0.107	0.107	0.107
Kurtosis		-0.270	-0.458	-0.270
Std. Error of Kurtosis		0.213	0.213	0.213
Minimum		4.000	3.000	3.000
Maximum		20.000	15.000	15.000







Exploratory factor analysis for foreign language fluency items

Rotated Component Matrix[a]

Sno	Item no	Items	Component 1	h2
1	7	SE7 I can remain calm when facing difficulties in an English conversation because I can rely on my coping abilities.	0.882	0.777
2	8	SE8 When I am confronted with a problem in an English communication, I can usually find several solutions.	0.880	0.774
3	4	SE4 I am confident that I could deal efficiently with unexpected English conversation.	0.870	0.757
4	9	SE9 If I am in trouble in an English communication, I can usually think of a solution.	0.867	0.752
5	10	SE10 In an English conversation I can usually handle whatever comes my way.	0.851	0.725
6	5	SE5 Thanks to my resourcefulness, I know how to handle unforeseen English conversation.	0.822	0.676
7	2	SE2 If someone doesn't understand my English, I can find the means and ways to say what I want.	0.814	0.663
8	3	SE3 It is easy for me to stick to my aims and accomplish my goals in English communication.	0.813	0.661
9	6	SE6 I can solve most problems if I invest the necessary effort in English communication.	0.789	0.623
10	1	SE1 I can always manage to solve my English problems if I try hard enough.	0.740	0.547

Extraction Method: Principal Component Analysis. Rotation Varimax. 69.558% of variance explained, Rotation Method: Varimax with Kaiser Normalization.

APPENDIX G

Structural Equation Modeling Statistics

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Structural Equation Model 1 (Proposed Hypothetical Model)

Measurement Model

Indicator		Loadings	Unstd. Estimate	S.E.	C.R.	P	Std. Estimate
MIND_PF1	<---	Mindfulness	1.000				0.752
MIND_PF2	<---	Mindfulness	1.028	0.055	18.544	***	0.773
MIND_PF3	<---	Mindfulness	0.800	0.048	16.553	***	0.654
MIND_PF4	<---	Mindfulness	0.798	0.049	16.205	***	0.638
FNA_P1	<---	Fear of Non-Achievement	1.000				0.900
FNA_P2	<---	Fear of Non-Achievement	1.114	0.026	43.254	***	0.930
FNA_P3	<---	Fear of Non-Achievement	0.729	0.018	41.053	***	0.909
CM_P1	<---	Concern for mistakes	1.000				0.925
CM_P2	<---	Concern for mistakes	1.113	0.021	52.558	***	0.952
CM_P3	<---	Concern for mistakes	0.976	0.021	45.406	***	0.911
CM_P4	<---	Concern for mistakes	0.971	0.022	44.457	***	0.905
PC_P1	<---	Perfectionist Cognitions	1.000				0.852
PC_P2	<---	Perfectionist Cognitions	1.077	0.032	33.165	***	0.918

PC_P3	<---	Perfectionist Cognitions	0.913	0.033	27.529	***	0.795
IF_P1	<---	Inferiority Feelings	1.000				0.935
IF_P2	<---	Inferiority Feelings	0.694	0.014	48.426	***	0.926
IF_P3	<---	Inferiority Feelings	0.699	0.015	47.816	***	0.922
FLA_P1	<---	Foreign Language Anxiety	1.000				0.932
FLA_P2	<---	Foreign Language Anxiety	1.043	0.019	53.856	***	0.950
FLA_P3	<---	Foreign Language Anxiety	0.549	0.021	25.765	***	0.696
FLA_P4	<---	Foreign Language Anxiety	1.043	0.021	49.055	***	0.925
SE_P1	<---	Self-Efficacy	1.000				0.957
SE_P2	<---	Self-Efficacy	0.750	0.013	59.296	***	0.948
SE_P3	<---	Self-Efficacy	0.691	0.013	52.228	***	0.919
FLU_P1	<---	Foreign Language Fluency	1.000				0.950
FLU_P2	<---	Foreign Language Fluency	0.748	0.013	59.201	***	0.949
FLU_P3	<---	Foreign Language Fluency	0.750	0.012	60.705	***	0.955

Model Fit indices:Model $\chi 2 = 1274.732$, df=303, p=.000; $\chi 2/df = 4.203$; GFI=.896; CFI=.960; TLI=.954; PNFI=.818; RMSEA=.062 (90%CI=.059-.066) pClose=.000

Structural Equation Model 2 (Modified)

Measurement Model

Indicator		Loadings	Unstd. Estimate	S.E.	C.R.	P	Std. Estimate
MIND_PF1	<---	Mindfulness	1				0.753
MIND_PF2	<---	Mindfulness	1.027	0.055	18.538	***	0.773
MIND_PF3	<---	Mindfulness	0.799	0.048	16.549	***	0.653
MIND_PF4	<---	Mindfulness	0.796	0.049	16.188	***	0.637
FNA_P1	<---	Fear of Non-Achievement	1				0.9
FNA_P2	<---	Fear of Non-Achievement	1.114	0.026	43.111	***	0.93
FNA_P3	<---	Fear of Non-Achievement	0.729	0.018	40.963	***	0.91
CM_P1	<---	Concern for mistakes	1				0.925
CM_P2	<---	Concern for mistakes	1.113	0.021	52.557	***	0.952
CM_P3	<---	Concern for mistakes	0.976	0.021	45.403	***	0.911
CM_P4	<---	Concern for mistakes	0.971	0.022	44.454	***	0.905
PC_P1	<---	Perfectionist Cognitions	1				0.851
PC_P2	<---	Perfectionist Cognitions	1.077	0.033	33.09	***	0.918
PC_P3	<---	Perfectionist Cognitions	0.913	0.033	27.453	***	0.794

IF_P1	<---	Inferiority Feelings	1				0.935
IF_P2	<---	Inferiority Feelings	0.694	0.014	48.404	***	0.926
IF_P3	<---	Inferiority Feelings	0.699	0.015	47.807	***	0.922
FLA_P1	<---	Foreign Language Anxiety	1				0.931
FLA_P2	<---	Foreign Language Anxiety	1.043	0.019	53.716	***	0.949
FLA_P3	<---	Foreign Language Anxiety	0.549	0.021	25.746	***	0.695
FLA_P4	<---	Foreign Language Anxiety	1.044	0.021	49.056	***	0.925
SE_P1	<---	Self-Efficacy	1				0.957
SE_P2	<---	Self-Efficacy	0.75	0.013	59.273	***	0.948
SE_P3	<---	Self-Efficacy	0.691	0.013	52.213	***	0.919
FLU_P1	<---	Foreign Language Fluency	1				0.95
FLU_P2	<---	Foreign Language Fluency	0.748	0.013	59.145	***	0.949
FLU_P3	<---	Foreign Language Fluency	0.75	0.012	60.642	***	0.955

Model Fit indices:Model $\chi 2 = 1279.959$, df=306, p=.000; $\chi 2/df = 4.183$; GFI=.896; CFI=.960; TLI=.954; PNFI=.826; RMSEA=.062 (90%CI=.058-.065) pClose=.000

Structural Equation Model 3 (second order)

Measurement Model

Indicator		Loadings	Unstd. Estimate	S.E.	C.R.	P	Std. Estimate
Second-Order							
Fear of Non-Achievement	<---	Irrational Thought	1.383	0.081	17.037	***	0.864
Concern for mistakes	<---	Irrational Thought	1.661	0.101	16.481	***	0.789
Inferiority Feelings	<---	Irrational Thought	1.054	0.074	14.148	***	0.626
Perfectionist Cognitions	<---	Irrational Thought	1.000				0.810
First-Order							
MIND_PF1	<---	Mindfulness	1.000				0.750
MIND_PF2	<---	Mindfulness	1.032	0.056	18.486	***	0.773
MIND_PF3	<---	Mindfulness	0.802	0.049	16.516	***	0.654
MIND_PF4	<---	Mindfulness	0.801	0.049	16.196	***	0.640
FNA_P1	<---	Fear of Non-Achievement	1.000				0.899
FNA_P2	<---	Fear of Non-Achievement	1.112	0.026	42.868	***	0.928
FNA_P3	<---	Fear of Non-Achievement	0.731	0.018	40.961	***	0.911

CM_P1	<---	Concern for mistakes	1.000				0.924
CM_P2	<---	Concern for mistakes	1.115	0.021	52.309	***	0.953
CM_P3	<---	Concern for mistakes	0.978	0.022	45.326	***	0.912
CM_P4	<---	Concern for mistakes	0.972	0.022	44.252	***	0.905
PC_P1	<---	Perfectionist Cognitions	1.000				0.699
PC_P2	<---	Perfectionist Cognitions	1.098	0.035	31.395	***	0.767
PC_P3	<---	Perfectionist Cognitions	1.306	0.061	21.433	***	0.931
INF_P1	<---	Inferiority Feelings	1.000				0.935
INF_P2	<---	Inferiority Feelings	0.694	0.014	48.401	***	0.926
INF_P3	<---	Inferiority Feelings	0.699	0.015	47.752	***	0.922
FLA_P1	<---	Foreign Language Anxiety	1.000				0.931
FLA_P2	<---	Foreign Language Anxiety	1.043	0.020	53.253	***	0.949
FLA_P3	<---	Foreign Language Anxiety	0.531	0.021	24.802	***	0.684
FLA_P4	<---	Foreign Language Anxiety	1.045	0.021	48.854	***	0.925

SE_P1	<---	Self-Efficacy	1.000				0.957
SE_P2	<---	Self-Efficacy	0.750	0.013	59.343	***	0.948
SE_P3	<---	Self-Efficacy	0.690	0.013	51.987	***	0.917
FLU_P1	<---	Foreign Language Fluency	1.000				0.949
FLU_P2	<---	Foreign Language Fluency	0.749	0.013	59.254	***	0.950
FLU_P3	<---	Foreign Language Fluency	0.751	0.012	60.977	***	0.956

Model fit indices: Model χ2 = 1304, df=354, p=.000; χ2/df = 4.194; GFI=.889; CFI=.959; TLI=.954; PNFI=.839; RMSEA=.062 (90%CI = .058 - .065)pClose=.000)

Structural Equation Model 4 (second order)

Measurement Model			Measurement Model Unstd. Estimate	S.E.	C.R.	P	Std. Estimate
Second Order Factor							
Fear of Non-Achievement	<---	Irrational thought	1.350	0.079	17.184	***	0.855
Concern for mistakes	<---	Irrational thought	1.659	0.099	16.827	***	0.799
Inferiority Feelings	<---	Irrational thought	1.054	0.073	14.436	***	0.635
Perfectionist Cognitions	<---	Irrational thought	1.000				0.815

First order Factors

MIND_PF1	<---	Mindfulness	1.000				0.748
MIND_PF2	<---	Mindfulness	1.033	0.056	18.441	***	0.771
MIND_PF3	<---	Mindfulness	0.807	0.049	16.521	***	0.656
MIND_PF4	<---	Mindfulness	0.809	0.050	16.264	***	0.644
FNA_P1	<---	Fear of Non-Achievement	1.000				0.899
FNA_P2	<---	Fear of Non-Achievement	1.110	0.026	42.720	***	0.927
FNA_P3	<---	Fear of Non-Achievement	0.732	0.018	41.057	***	0.912
CM_P1	<---	Concern for mistakes	1.000				0.924
CM_P2	<---	Concern for mistakes	1.115	0.021	52.329	***	0.953
CM_P3	<---	Concern for mistakes	0.978	0.022	45.330	***	0.912
CM_P4	<---	Concern for mistakes	0.972	0.022	44.270	***	0.905
PC_P1	<---	Perfectionist Cognitions	1.000				0.704
PC_P2	<---	Perfectionist Cognitions	1.098	0.035	31.489	***	0.773
PC_P3	<---	Perfectionist Cognitions	1.287	0.059	21.638	***	0.925

IF_P1	<---	Inferiority Feelings	1.000				0.935
IF_P2	<---	Inferiority Feelings	0.694	0.014	48.402	***	0.926
IF_P3	<---	Inferiority Feelings	0.699	0.015	47.757	***	0.922
FLA_P1	<---	Foreign Language Anxiety	1.000				0.931
FLA_P2	<---	Foreign Language Anxiety	1.042	0.020	53.355	***	0.948
FLA_P3	<---	Foreign Language Anxiety	0.529	0.021	24.688	***	0.682
FLA_P4	<---	Foreign Language Anxiety	1.045	0.021	49.116	***	0.926
SE_P1	<---	Self-Efficacy	1.000				0.957
SE_P2	<---	Self-Efficacy	0.750	0.013	59.306	***	0.948
SE_P3	<---	Self-Efficacy	0.690	0.013	52.115	***	0.918
FLU_P1	<---	Foreign Language Fluency	1.000				0.950
FLU_P2	<---	Foreign Language Fluency	0.748	0.013	59.144	***	0.949
FLU_P3	<---	Foreign Language Fluency	0.750	0.012	60.920	***	0.956

Model fit indices: Model χ2 = 1248.722, df=308, p=.000; χ2/df = 4.054; GFI=.893; CFI=.961; TLI=.956; PNFI=.833; RMSEA=.061 (90%CI = .057 - .064) pClose=.000

Structural Equation Model 5 (second order)

Measurement Model

Measurement Model			Unstd. Estimate	S.E.	C.R.	P	Std. Estimate
Second Order Factor							
Fear of Non-Achievement	<---	Irrational thought	1.350	0.079	17.186	***	0.855
Concern for mistakes	<---	Irrational thought	1.659	0.099	16.833	***	0.799
Inferiority Feelings	<---	Irrational thought	1.054	0.073	14.437	***	0.635
Perfectionist Cognitions	<---	Irrational thought	1.000				0.815
First order Factors							
MIND_PF1	<---	Mindfulness	1.000				0.749
MIND_PF2	<---	Mindfulness	1.027	0.056	18.499	***	0.768
MIND_PF3	<---	Mindfulness	0.810	0.049	16.631	***	0.659
MIND_PF4	<---	Mindfulness	0.810	0.050	16.332	***	0.645
FNA_P1	<---	Fear of Non-Achievement	1.000				0.899
FNA_P2	<---	Fear of Non-Achievement	1.110	0.026	42.716	***	0.927
FNA_P3	<---	Fear of Non-Achievement	0.732	0.018	41.058	***	0.912

CM_P1	<---	Concern for mistakes	1.000				0.924
CM_P2	<---	Concern for mistakes	1.115	0.021	52.330	***	0.953
CM_P3	<---	Concern for mistakes	0.978	0.022	45.330	***	0.912
CM_P4	<---	Concern for mistakes	0.972	0.022	44.271	***	0.905
PC_P1	<---	Perfectionist Cognitions	1.000				0.704
PC_P2	<---	Perfectionist Cognitions	1.098	0.035	31.491	***	0.773
PC_P3	<---	Perfectionist Cognitions	1.287	0.059	21.642	***	0.925
INF_P1	<---	Inferiority Feelings	1.000				0.935
INF_P2	<---	Inferiority Feelings	0.694	0.014	48.402	***	0.926
INF_P3	<---	Inferiority Feelings	0.699	0.015	47.758	***	0.922
FLA_P1	<---	Foreign Language Anxiety	1.000				0.931
FLA_P2	<---	Foreign Language Anxiety	1.042	0.020	53.269	***	0.948

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FLA_P3	<---	Foreign Language Anxiety	0.529	0.021	24.674	***	0.681
FLA_P4	<---	Foreign Language Anxiety	1.046	0.021	49.168	***	0.926
SE_P1	<---	Self-Efficacy	1.000				0.957
SE_P2	<---	Self-Efficacy	0.750	0.013	59.341	***	0.948
SE_P3	<---	Self-Efficacy	0.690	0.013	52.111	***	0.918
FLU_P1	<---	Foreign Language Fluency	1.000				0.950
FLU_P2	<---	Foreign Language Fluency	0.748	0.013	59.611	***	0.950
FLU_P3	<---	Foreign Language Fluency	0.750	0.012	61.406	***	0.956

Model fit indices: Model χ2 = 1222.306, df=307, p=.000; χ2/df = 3.981; GFI=.896; CFI=.967; TLI=.957; PNFI=.831; RMSEA=.060 (90%CI = .056 - .063) pClose=.000

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Appendix H

Repeated Measure Statistics

Mindfulness

Multivariate Tests – mindfulness (MIND)

Effect		Value	F	Hypothesis df	Error df	Sig.
factor1	Pillai's Trace	.213	12.855[b]	2.000	95.000	.000
	Wilks' Lambda	.787	12.855[b]	2.000	95.000	.000
	Hotelling's Trace	.271	12.855[b]	2.000	95.000	.000
	Roy's Largest Root	.271	12.855[b]	2.000	95.000	.000
factor1 * Experiment Group	Pillai's Trace	.004	.199[b]	2.000	95.000	.820
	Wilks' Lambda	.996	.199[b]	2.000	95.000	.820
	Hotelling's Trace	.004	.199[b]	2.000	95.000	.820
	Roy's Largest Root	.004	.199[b]	2.000	95.000	.820

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

b. Exact statistic

Mauchly's Test of Spericity[a]

Measure: Mindfulness

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.987	1.240	2	.538	.987	1.000	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.[a]

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

b. May be used to adjust the degrees of freedom for the averaged tests of significance.

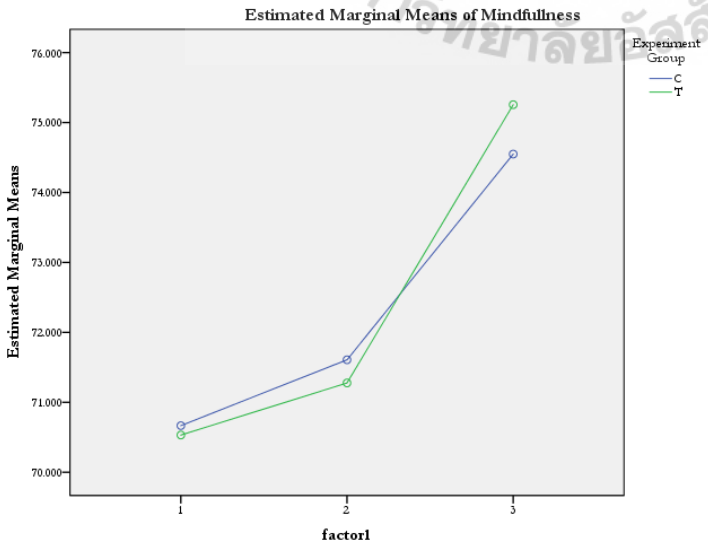
Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Experiment Group * factor1

Measure: Mindfulness

Experiment Group	Factor1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	Pre-test	70.667	1.006	68.671	72.663
	Post-test 1	71.608	1.367	68.895	74.321
	Post-test 2	74.549	1.445	71.681	77.417
2	Pre-test	70.532	1.048	68.453	72.611
	Post-test 1	71.277	1.424	68.451	74.103
	Post-test 2	75.255	1.505	72.268	78.243

Profile Plots



Fear of Non-Achievement (FNA)

Multivariate Tests – Fear of Non-Achievement (FNA)

Effect		Value	F	Hypothesis df	Error df	Sig.
factor1	Pillai's Trace	.482	44.171[b]	2.000	95.000	.000
	Wilks' Lambda	.518	44.171[b]	2.000	95.000	.000
	Hotelling's Trace	.930	44.171[b]	2.000	95.000	.000
	Roy's Largest Root	.930	44.171[b]	2.000	95.000	.000
factor1 * Experiment Group	Pillai's Trace	.010	.494[b]	2.000	95.000	.612
	Wilks' Lambda	.990	.494[b]	2.000	95.000	.612
	Hotelling's Trace	.010	.494[b]	2.000	95.000	.612
	Roy's Largest Root	.010	.494[b]	2.000	95.000	.612

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

b. Exact statistic

Mauchly's Test of Sphericity[a]

Measure: Fear of Non-Achievement

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.923	7.586	2	.023	.929	.956	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.[a]

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

b. May be used to adjust the degrees of freedom for the averaged tests of significance.

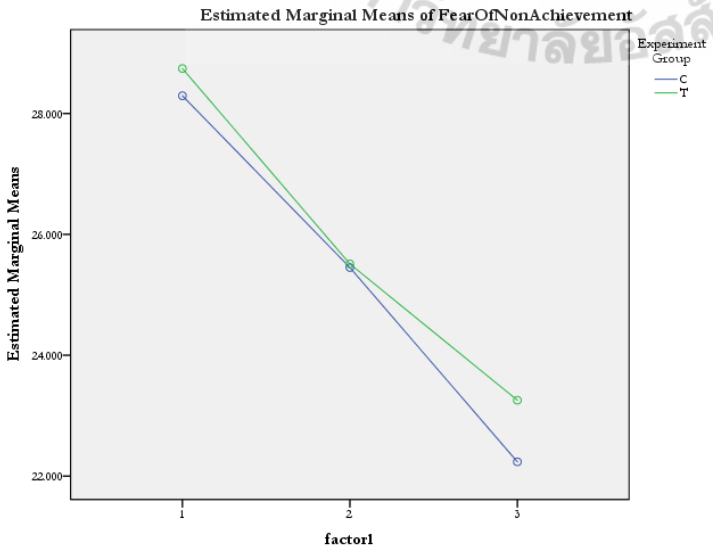
Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Experiment Group * factor1

Measure: Fear of Non-Achievement

Experiment Group	Factor1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	Pre-test	28.294	.910	26.488	30.100
	Post-test 1	25.451	1.119	23.229	27.673
	Post-test 2	22.235	1.198	19.858	24.613
2	Pre-test	28.745	.948	26.864	30.626
	Post-test 1	25.511	1.166	23.196	27.825
	Post-test 2	23.255	1.248	20.779	25.732

Profile Plots



Concern for Mistakes (CM)

Multivariate Tests – Concern for Mistakes (CM)

Effect		Value	F	Hypothesis df	Error df	Sig.
factor1	Pillai's Trace	.409	32.815[b]	2.000	95.000	.000
	Wilks' Lambda	.591	32.815[b]	2.000	95.000	.000
	Hotelling's Trace	.691	32.815[b]	2.000	95.000	.000
	Roy's Largest Root	.691	32.815[b]	2.000	95.000	.000
factor1 * Experiment Group	Pillai's Trace	.009	.414[b]	2.000	95.000	.662
	Wilks' Lambda	.991	.414[b]	2.000	95.000	.662
	Hotelling's Trace	.009	.414[b]	2.000	95.000	.662
	Roy's Largest Root	.009	.414[b]	2.000	95.000	.662

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

b. Exact statistic

Mauchly's Test of Spericity[a]

Measure: Concern for Mistakes

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.855	14.850	2	.001	.874	.898	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.[a]

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

b. May be used to adjust the degrees of freedom for the averaged tests of significance.

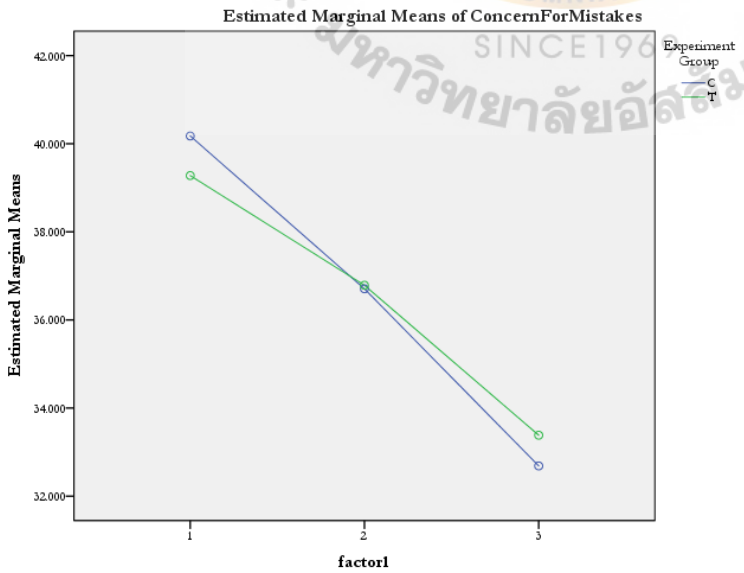
Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Experiment Group * factor1

Measure: Concern for Mistakes

Experiment Group	Factor1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	Pre-test	40.176	1.883	36.439	43.914
	Post-test 1	36.706	1.953	32.830	40.582
	Post-test 2	32.686	1.938	28.840	36.532
2	Pre-test	39.277	1.961	35.383	43.170
	Post-test 1	36.787	2.034	32.750	40.825
	Post-test 2	33.383	2.018	29.376	37.390

Profile Plots



Perfectionistic cognition (PC)

Multivariate Tests – Perfectionistic cognition (PC)

Effect		Value	F	Hypothesis df	Error df	Sig.
factor1	Pillai's Trace	.097	5.121[b]	2.000	95.000	.008
	Wilks' Lambda	.903	5.121[b]	2.000	95.000	.008
	Hotelling's Trace	.108	5.121[b]	2.000	95.000	.008
	Roy's Largest Root	.108	5.121[b]	2.000	95.000	.008
factor1 * Experiment Group	Pillai's Trace	.025	1.207[b]	2.000	95.000	.304
	Wilks' Lambda	.975	1.207[b]	2.000	95.000	.304
	Hotelling's Trace	.025	1.207[b]	2.000	95.000	.304
	Roy's Largest Root	.025	1.207[b]	2.000	95.000	.304

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

b. Exact statistic

Mauchly's Test of Sphericity[a]

Measure: Perfectionistic cognition

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.950	4.849	2	.089	.953	.982	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.[a]

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

b. May be used to adjust the degrees of freedom for the averaged tests of significance.

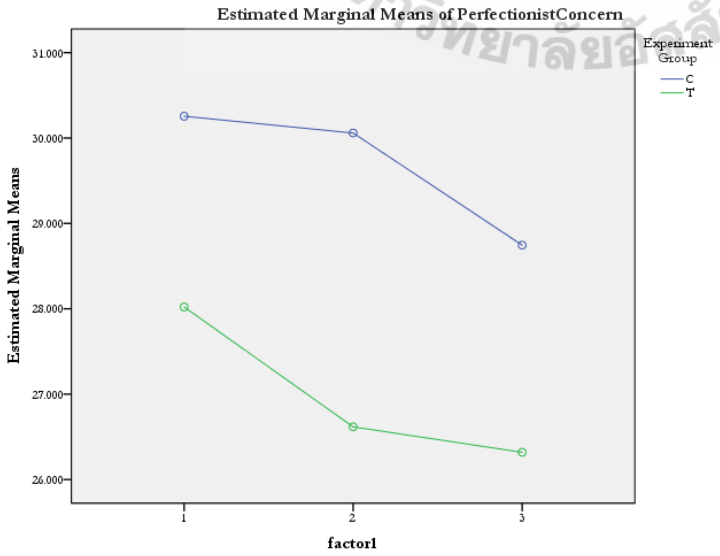
Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Experiment Group * factor1

Measure: Perfectionistic cognition

Experiment Group	Factor1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	Pre-test	30.255	.939	28.391	32.119
	Post-test 1	30.059	.943	28.187	31.930
	Post-test 2	28.745	.964	26.832	30.658
2	Pre-test	28.021	.978	26.080	29.963
	Post-test 1	26.617	.982	24.668	28.566
	Post-test 2	26.319	1.004	24.327	28.312

Profile Plots



Inferiority feeling (INF)

Multivariate Tests – Inferiority feeling (INF)

Effect		Value	F	Hypothesis df	Error df	Sig.
factor1	Pillai's Trace	.037	1.830[b]	2.000	95.000	.166
	Wilks' Lambda	.963	1.830[b]	2.000	95.000	.166
	Hotelling's Trace	.039	1.830[b]	2.000	95.000	.166
	Roy's Largest Root	.039	1.830[b]	2.000	95.000	.166
factor1 * Experiment Group	Pillai's Trace	.005	.245[b]	2.000	95.000	.784
	Wilks' Lambda	.995	.245[b]	2.000	95.000	.784
	Hotelling's Trace	.005	.245[b]	2.000	95.000	.784
	Roy's Largest Root	.005	.245[b]	2.000	95.000	.784

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

b. Exact statistic

Mauchly's Test of Sperecity[a]

Measure: Inferiority feeling

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.972	2.686	2	.261	.973	1.000	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.[a]

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

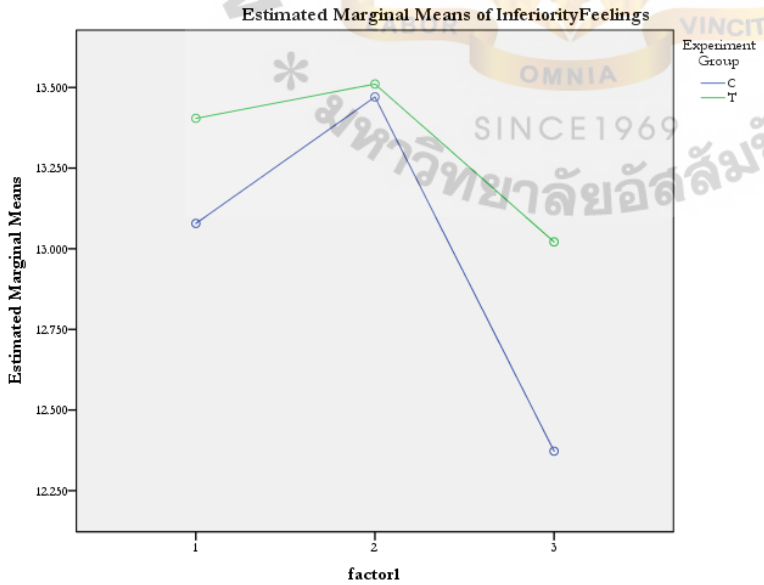
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Experiment Group * factor1

Measure: Inferiority feeling

Experiment Group	Factor1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	Pre-test	13.078	.864	11.363	14.793
	Post-test 1	13.471	.944	11.596	15.345
	Post-test 2	12.373	.911	10.563	14.182
2	Pre-test	13.404	.900	11.618	15.191
	Post-test 1	13.511	.984	11.558	15.463
	Post-test 2	13.021	.949	11.137	14.906

Profile Plots



Foreign language anxiety (FLA)

Multivariate Tests – Foreign language anxiety (FLA)

Effect		Value	F	Hypothesis df	Error df	Sig.
factor1	Pillai's Trace	.268	17.358[b]	2.000	95.000	.000
	Wilks' Lambda	.732	17.358[b]	2.000	95.000	.000
	Hotelling's Trace	.365	17.358[b]	2.000	95.000	.000
	Roy's Largest Root	.365	17.358[b]	2.000	95.000	.000
factor1 * Experiment Group	Pillai's Trace	.058	2.911[b]	2.000	95.000	.059
	Wilks' Lambda	.942	2.911[b]	2.000	95.000	.059
	Hotelling's Trace	.061	2.911[b]	2.000	95.000	.059
	Roy's Largest Root	.061	2.911[b]	2.000	95.000	.059

a. Design: Intercept + Experiment Group Within Subjects Design: factor1

b. Exact statistic

Mauchly's Test of Spericity[a]

Measure: Foreign language anxiety

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.927	7.182	2	.028	.932	.960	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.[a]

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

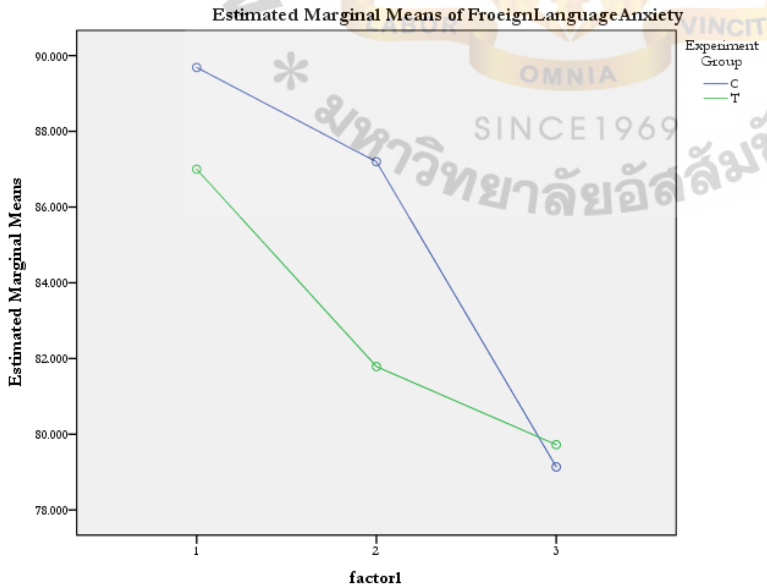
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Experiment Group * factor1

Measure: Foreign language anxiety

Experiment Group	Factor1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	Pre-test	89.686	2.561	84.602	94.770
	Post-test 1	87.196	2.853	81.533	92.859
	Post-test 2	79.137	2.926	73.328	84.946
2	Pre-test	87.000	2.668	81.704	92.296
	Post-test 1	81.787	2.972	75.888	87.686
	Post-test 2	79.723	3.048	73.672	85.774

Profile Plots



Self-efficacy (SE)

Multivariate Tests – Self-efficacy (SE)

Effect		Value	F	Hypothesis df	Error df	Sig.
factor1	Pillai's Trace	.112	5.984[b]	2.000	95.000	.004
	Wilks' Lambda	.888	5.984[b]	2.000	95.000	.004
	Hotelling's Trace	.126	5.984[b]	2.000	95.000	.004
	Roy's Largest Root	.126	5.984[b]	2.000	95.000	.004
factor1 * Experiment Group	Pillai's Trace	.002	.099[b]	2.000	95.000	.906
	Wilks' Lambda	.998	.099[b]	2.000	95.000	.906
	Hotelling's Trace	.002	.099[b]	2.000	95.000	.906
	Roy's Largest Root	.002	.099[b]	2.000	95.000	.906

a. Design: Intercept + Experiment Group Within Subjects Design: factor1

b. Exact statistic

Mauchly's Test of Sperecity[a]

Measure: Self-efficacy

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.835	17.089	2	.000	.859	.882	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.[a]

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

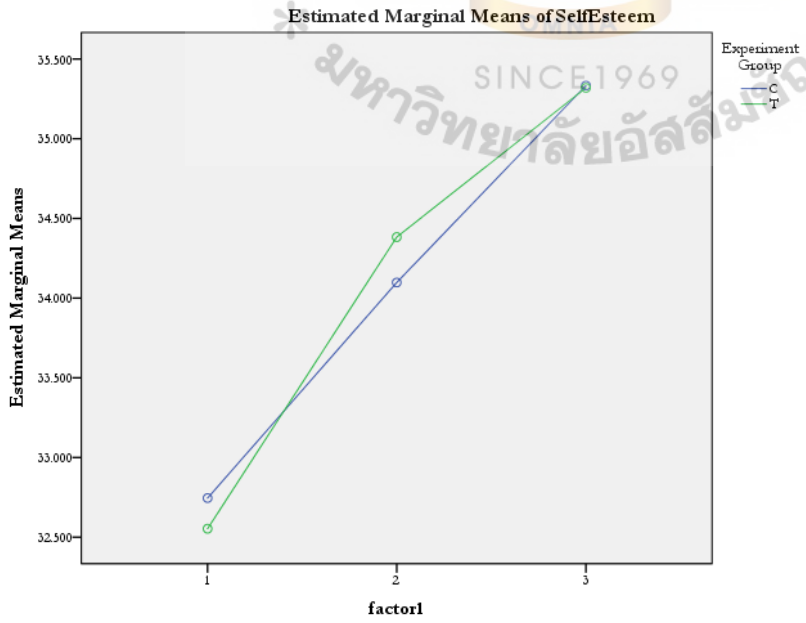
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Experiment Group * factor1

Measure: Self-efficacy

Experiment Group	Factor1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	Pre-test	32.745	1.119	30.523	34.967
	Post-test 1	34.098	1.057	32.001	36.195
	Post-test 2	35.333	1.228	32.895	37.771
2	Pre-test	32.553	1.166	30.239	34.868
	Post-test 1	34.383	1.101	32.198	36.568
	Post-test 2	35.319	1.279	32.780	37.859

Profile Plots



Foreign Language Fluency (FLU)

Multivariate Tests – Foreign language fluency (FLU)

Effect		Value	F	Hypothesis df	Error df	Sig.
factor1	Pillai's Trace	.261	16.791[b]	2.000	95.000	.000
	Wilks' Lambda	.739	16.791[b]	2.000	95.000	.000
	Hotelling's Trace	.353	16.791[b]	2.000	95.000	.000
	Roy's Largest Root	.353	16.791[b]	2.000	95.000	.000
factor1 * Experiment Group	Pillai's Trace	.006	.272[b]	2.000	95.000	.762
	Wilks' Lambda	.994	.272[b]	2.000	95.000	.762
	Hotelling's Trace	.006	.272[b]	2.000	95.000	.762
	Roy's Largest Root	.006	.272[b]	2.000	95.000	.762

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

b. Exact statistic

Mauchly's Test of Spericity[a]

Measure: Foreign language fluency

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
factor1	.751	27.184	2	.000	.801	.821	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.[a]

a. Design: Intercept + Experiment Group

Within Subjects Design: factor1

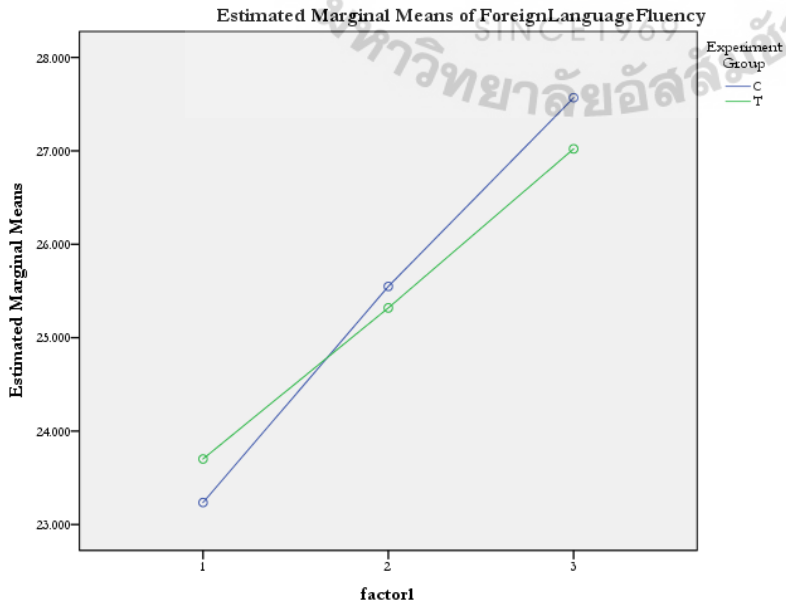
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Experiment Group * factor1

Measure: Foreign language fluency

Experiment Group	Factor1	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	Pre-test	23.235	1.299	20.657	25.813
	Post-test 1	25.549	1.365	22.840	28.258
	Post-test 2	27.569	1.400	24.789	30.348
2	Pre-test	23.702	1.353	21.017	26.388
	Post-test 1	25.319	1.421	22.498	28.141
	Post-test 2	27.021	1.458	24.126	29.916

Profile Plots



Appendix I

Newly Structured Mindfulness Intervention

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Mindfulness Workshop (on Day 1 for experiment 2 group, on Day 8 for experiment 1 group)

Min.	Topics
15	Introduction to mindfulness How mind and body connect (physical signs of anxiety and how to release them) Neutral state of mind here and now
30	Meditation exercise (*Anapana* Breathing Meditation)
30	Meditation exercise (*Vipassana* Meditation)
10	Thoughts awareness exercise
5	Experiment schedule and the daily practice

Lecture on 'foreign language development' (on Day 1 for experiment 1 group)

Min.	Topics
30	Tinglish – Thais' common mistakes in English communication
30	The five stages of foreign language acquisition - Preproduction stage (learners do not speak, just listen to second language and imitate sounds with no understanding of words) - Early production stage (learners begin to speak short word) - Speech emergence stage (learners can communicate with simple phrases and sentences using longer words and more complicated structures) - Intermediate fluency stage (learners have a large body of active vocabulary and start using more complex sentences in writing and speaking) - Advanced fluency stage (learners achieve cognitive language proficiency in second language) (Krashen, 1985)
30	How to speak English like a native speaker

Meditation Exercise (*Anapana* Breathing Meditation)

Calming the mind and focusing

1 Close your eyes.

2 Close your mouth and breathe through your nose.

3 Feel the sensation of your breath as it flows in and out of your nostrils at the tip of your nose. You may feel the sensation more strongly within the nostrils or on the upper lip.

4 To help you locate where you feel the touch sensation of the breath most distinctly, inhale deeply and force the air out through your nostrils. Wherever you feel the sensation most clearly and precisely is the place to focus your attention during your meditation sessions.

5 Feel the beginning, the middle, and the end of every in-breath, and the beginning, the middle, and the end of every out-breath.

6 Sometimes the breath will be short—there is no need to make it longer. Sometimes the breath will be long—there is no need to make it shorter. Sometimes the breath will be erratic—there is no need to even it out.

7 Just become aware of the breath as it goes in and out of the nostrils at the tip of the nose.

8 Feel the beginning, the middle, and the end of every in-breath, and the beginning, the middle, and the end of every out-breath.

9 Let the breath breathe itself.

10 Every time your attention moves away from the breath and shifts to a different object of awareness, such as a physical sensation or a thought, gently but firmly draw your attention back to the touch sensation of your breath. Mindfulness exercises and homework practice.

Singh, N.N. (2006) adopted from Flickstein (1998)

Meditation Exercise (*Vipassana* meditation – Body scanning)

Non-judgmental acceptance of present reality

1 Remain aware, remain equanimous, every moment aware, every moment equanimous

2 Moving your attention from head to feet and moving your attention from feet to head. Whether you experience the free flow throughout the body or you experience the free flow on certain part of the body, pass your attention to each and individual part of the body. If you don't feel any free flow anywhere, then keep on passing your attention on every part of the body and to each and individual part separately with all the patience.

3 Whether you experience a free flow of subtle vibration or you experience solidified intensified gross sensations on different part of the body, see if you maintain perfect equanimity, perfect equanimity. Understanding fully well that the entire physical structure and throughout the entire mental structure constantly changing, constantly changing. The contact of the two manifesting itself as this sensation and that sensation, constantly changing, constantly changing. At the experiential level, keep on understanding that every sensation, pleasant or unpleasant, subtle or gross, every sensation has the same characteristics of arising and passing away, arising, passing away. Changing, changing, changing.

4 With entire of experience, understanding its law of impermanent, and maintain perfect equanimity, perfect equanimity. How pleasant the sensation may be, see that you don't react with craving. How unpleasant the sensation may be, see that you don't react with aversion. Maintain perfect equanimity, whatever experience, perfect equanimity. With understanding of *anicca*, *anicca*, *anicca* (impermanence).

Extracted from Vipassana Meditation as taught by S.N. Goenka in the tradition of Sayagyi U Ba Khin. (Sukjai, 2020, Jan. 29)

Thought Awareness Exercise

Observing wandering thoughts	
1	The participant sits quietly, observing his/her breath coming in and going out, trying to maintain a silent mind. If whatever thought should arise, jot it down and try to come back to observe the breath.
2	At the end of 10 minutes, count the number of thoughts s/he has jotted down. Observe how quickly s/he can be aware of his/her wandering thoughts and come back to the breath.

The experiment process (2-minutes impromptu speech)

- A conductor randomly chooses an impromptu speech topic for each experimental subject from the list below
- Give the subject strictly no preparation time. S/he must give the speech as soon as the conductor finish reading the topic.
- The subject delivers the speech in English for 1-2 minutes, while the conductor keeps the timing.
- The subject fills in the on-line questionnaires to evaluate their perception on performance after each experiment.

Impromptu speech topics

Pre-test on Day 1

1. Share something unusual about your behavior.
2. Talk about a nickname you have and how you got it.
3. The thing that scares you most.
4. Tell us about your weirdest dream.
5. What's your favorite cartoon character?
6. Tell us ways to get up on Monday morning?
7. First date behavior tricks.
8. How do you know if a girl/guy likes you?
9. Tell us a scary ghost story.
10. Explain 3 uses for a pencil besides for writing.
11. Create a bedtime story that explains why elephants have trunks.
12. How do you communicate with your pets?
13. How to become popular among friends.
14. What is your morning routine?
15. If you were in charge of a company's outing, what's your plan?
16. If you were really sick of your boss, what would you do?
17. What are you most complained of at work?
18. Think of the funniest way to tell your parents that you are gay.
19. Why do people love junk food?
20. You are a piece of paper. Describe how we should use you before you get recycled.

Post-test 1 on Day 8

1. Cool games for rainy days.
2. You are an ant. Convince an anteater to not eat you.
3. How can you detect if your boyfriend/girlfriend is cheating on you?
4. Convince us that work/homework is harmful to your health.
5. What would you do if you won 10 million baht lottery.
6. Plastic bags ban does not really help the environment.
7. Explain 3 different ways to enjoy eating an Oreo cookie.
8. Online interactions will never replace physical friendships.
9. My best job ever.
10. The most successful person you know.
11. What can you do best?
12. What is your biggest concern for the future?
13. Who is your role model?
14. What would you rather be; rich but unhealthy, or, poor but healthy?
15. Should children under 7 be allowed to use a smart phone?
16. What are you most complained of at home?
17. Do you believe in black magic?
18. Should human cloning be banned?
19. Should employees be fired if robots cope with their functions?
20. If everything in the world had to change to the same color, what color would you choose and why?

Post-test 2 on Day 15

1. What is your favorite meal? Tell us how to make it.
2. Cool games on a deserted island.
3. What is your New Year resolution?
4. Why do people fail in trying to lose weight?
5. You are a salesperson trying to sell us the shirt you have on.
6. The best present from your parents that you will always remember.
7. If you publish your first book, what is it about?
8. What is the most difficult thing you have ever done?
9. If you were an animal, what would you be?
10. You are a mad scientist. Tell us about your latest invention.
11. What is the most important lesson of your life so far?
12. Why do Thai people always smile?
13. What would you rather be; intelligent but have no friend, or dumb but have lots of friends?
14. What human quality do we need more in our society?
15. Who has been the most influential person in your life and why?
16. What is the most important skill for starting a business?
17. Tell us about your most embarrassing moment in your life.
18. Translation technology will replace the need to learn a language.
19. Renting a house is better than buying.
20. Guide on overcoming phobias

BIOGRAPHY

Dr. Netpreeya (Musigchai) Choomchaiyo or "Kru Kate" attended Chulalongkorn University and earned bachelor degree in Business Administration in Accounting, Banking, and Finance, a Master's degree in Business Administration (MBA) from Loyola Marymount University, USA, and a Doctorate Degree in Business Administration (DBA) from the University of South Australia, Australia. She is now a candidate of PhD in Counseling Psychology at Assumption University, Thailand.

During her 25-years' service at the Department of International Trade Promotion, Ministry of Commerce, she took a director position of various offices with expertise in international marketing, product and new business development, public relations as well as trade logistics. She also held chief positions in the past such as Deputy Spokesman for Prime Minister's office (Gen. Surayuth Julanon cabinet), Deputy Spokesman for Ministry of Commerce, Deputy Spokesman for Ministry of Education, Assistant to Deputy Prime Minister (Mr. Pongpon Adireksarn), Assistant to Deputy Minister of Commerce (Mr. Pongsak Ruktapongpaisai), etc.

In addition to her governmental work, she is also known for her revolutionary English teaching in Thailand as the first person to introduce a natural technique to acquire a foreign language through subconscious brain. This technique helps learners to communicate in English more fluently and directly without translating in Thai.

Kru Kate had won numerous awards in the past years, for example, four of the Publisher's Best Seller awards from Amarin Printing and Publishing Company from her books "*Why can't Thais speak English?*", which sold 500,000 copies. In addition, she also won Women of the Year 2002 Award from *Cosmopolitan Magazine*, Working Women of the Year

2002 award from *Working Women Magazine*, and the most recent one, Nivea's Thailand Most Influential Women 2009 award.

For her role of mass communication, she was a news anchor and a host of many Thai and English television programs.

At present, she is a founder and executive director of Inspiring Wisdom Co., Ltd., a company dedicated to the development of integrated skills of human resources in Thailand. She is also a founder and director of Kru Kate's English School, a counselor, a guest speaker on communication, leadership, conflict management, trade logistics development, etc., as well as a columnist in several newspapers and magazines, and a radio host.

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