LANGERIAN MINDFULNESS ON LEARNED HELPLESSNESS

AMONG UNDERGRADUATES IN MALAYSIA

ANG CHING TING

WONG WEN PIN

YONG XIN YI

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Langerian Mindfulness on Learned Helplessness

among Undergraduates in Malaysia

Ang Ching Ting, Wong Wen Pin, and Yong Xin Yi.

Universiti Tunku Abdul Rahman

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ANG CHING TING

WONG WEN PIN

YONG XIN YI

APPROVAL FORM

This research paper attached in this document, entitled "Langerian Mindfulness on Learned Helplessness among Undergraduates in Malaysia" was prepared and submitted by "Ang Ching Ting, Wong Wen Pin, and Yong Xin Yi" in fulfilling partially the requirements for the Bachelor of Social Science (Hons) Psychology is hereby accepted.

_____   Date: _____

Supervisor

(Dr. Tan Chee Seng)

Abstract

Learned helplessness is an emerging issue in higher education with adverse psychological and academic consequences such as absenteeism, course withdrawal, depression, academic procrastination, and psychoactive drug abuse. Researchers have suggested Langerian mindfulness as a new and practical alternative to reduce learned helplessness. However, the causal effect of Langerian mindfulness remains open to date. Hence, an online experiment using a between-subject design was conducted in the present study to examine the effectiveness of Langerian mindfulness in reducing learned helplessness among undergraduates in Malaysia. A total of 165 Malaysian full-time undergraduates were recruited and randomly assigned to either the Treatment group or the Control group. Participants first completed the unsolvable concept formation tasks and answered the Learned Helplessness Scale. Next, the Treatment group underwent a Langerian mindfulness practice while the Control group summarized BBC news article. Finally, all participants answered the Positive State Mindfulness Scale and twenty anagrams. The independent-samples t-test results indicated that the Treatment group scored significantly higher in anagrams (i.e., low learned helplessness) than the Control group. The findings not only provide empirical support to the beneficial effect of Langerian mindfulness on decreasing learned helplessness but also demonstrate the usability of Langerian mindfulness in the Malaysian context. Local educators and practitioners are encouraged to employ Langerian mindfulness practice to help students to alleviate their learned helplessness.

Keywords: Langerian mindfulness, learned helplessness, depression, undergraduates

DECLARATION

We declare that the information contained in this dissertation is the outcome of our own

effort and that due acknowledgement has been given in the bibliography and references to all

sources regardless of them being printed, electronic or personal.

Name   : ANG CHING TING

Student ID   : 17AAB04484

Signed   : _____

Date   : 29th March 2021

Name   : WONG WEN PIN

Student ID   : 17AAB03897

Signed   : _____

Date   : 29th March 2021

Name   : YONG XIN YI

Student ID   : 17AAB03106

Signed   : _____

Date   : 29th March 2021

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List of Abbreviations

MBSR   Mindfulness-Based Stress Reduction

ERP   Event-Related Potential

LHS   Learned Helplessness Scale

PSMS   Positive State Mindfulness Scale

FA   Focused Attention

NA   Novelty Appreciation

OEE   Open-Ended Expectation

LMS   Langerian Mindfulness Scale

CEI   Current Experiences Inventory

α Significance Level (Alpha)

r Correlation Coefficient

Chapter I

Introduction

1.0 Background of Study

From the late 19th century until today, the term "learned helplessness" is continuing to gain attention from researchers, educators, and the public. Learned helplessness in humans is defined as when individuals experience a non-contingency between their actions and the outcome of those actions; they will believe that a similar outcome will happen in the future (Maier & Seligman, 1976). Biber and Başer (2014) highlighted that when individuals feel that they have no or little control over their situation, they will begin to behave helplessly. This is because they assume that they could not change their past negative experiences, then they begin to generalize their assumptions (Biber & Başer, 2014). Thus, learned helplessness can cause people to overlook possible opportunities for relief or change.

Past findings revealed that learned helplessness results in three significant deficits, namely decreased motivation (Molesworth et al., 2020), difficulty in recognizing the association between actions and outcomes (Abramson et al., 1978), as well as depression (Cheng et al., 2018). Learned helplessness is a behavior that can be observed in a wide range of living creatures, including animals and human beings. For human beings, learned helplessness was found among students (Prihadi et al., 2018; Prihadi et al., 2019; Sorrenti et al., 2014), people living with mental disabilities (Gacek et al., 2017), working adults (Al-Harthi, 2020; Chung et al., 2017), and elderly (Flannery, 2002). With the researches above, it can be concluded that learned helplessness may happen to everyone regardless of their demographic backgrounds. On top of that, learned helplessness is commonly found among students, and it brought adverse effects to students, such as academic procrastination (Prihadi et al., 2018) and mathematic

anxiety (Gürefe & Bakalim, 2018). Therefore, studying factors that can decrease students' level of learned helplessness is essential.

In recent years, the concept of mindfulness has continuously grown and become a popular topic that possesses increased attention in the research field (Eberth & Sedlmeier, 2012). In fact, mindfulness has two different traditions: Eastern contemplative mindfulness and Western non-contemplative or Langerian mindfulness (Vallacher et al., 2016). Contemplative mindfulness focuses more on managing attention and being non-judgmental about an ongoing experience such as meditation (Dahl & Davidson, 2019). In contrast, Langerian mindfulness is a type of mindfulness that does not require practices of meditation. Langerian mindfulness, instead, focuses on the process of drawing new distinctions (Langer et al., 1989).

Pagnini et al. (2016) proposed that Langerian mindfulness could decrease the effect of learned helplessness. From the view of Langerian mindfulness, learned helplessness is seen as an intense form of mindlessness (Pagnini et al., 2016). The researchers explained mindlessness as even the situation has changed; individuals mindlessly take the correlations created in the past (negative experiences) into the present. When mindful, a person can respond to the current situation flexibly, not depending on previous experience that the outcome is inescapable. Therefore, Pagnini et al. (2016) argued that learned helplessness does not occur when a person is in a mindful state. Through the explanation above, the purpose of this current research is to study the effectiveness of Langerian mindfulness on learned helplessness as Langerian mindfulness allows individuals to be aware that the current situation has changed and that their past failure will not determine their present performance.

1.1 Problem Statement

Recently, learned helplessness has become increasingly relevant due to the COVID-19 pandemic across the world. Factors such as a loss of financial stability, fear of infection, living in "lockdowns", and news about the acceleration in the number of new cases had presented a great deal of uncertainties in people's lives that can cause the feeling of helplessness (Polizzi et al., 2020; Smirni et al., 2020). This is detrimental to the mental health of the general population, as studies conducted across multiple countries had suggested a positive relationship between learned helplessness and symptoms of anxiety and depression amidst the pandemic (Kim et al., 2020; Smirni et al., 2020; Zhang et al., 2020). Apart from that, learned helplessness is commonly found among undergraduates with various negative impacts. Recent studies found that learned helplessness correlated positively with psychoactive drug use and abuse (Adeoye et al., 2020), mathematics anxiety (Gürefe & Bakalim, 2018), absenteeism, course withdrawal (Lee & Carson, 2014), and academic procrastination (Prihadi et al., 2018) among undergraduates. As such, a new and effective intervention is essential to shed light on learned helplessness, particularly for undergraduates.

Past studies have suggested several methods in dealing with learned helplessness. Firstly, Klein and Seligman (1976) had found that experiencing a controllable version of the event that caused learned helplessness can reduce its effects. For instance, the authors suggested that a fired accountant that is helpless could benefit from solving accounting problems found in an accounting textbook. As such, they suggested clinicians to provide controllable events or solvable problems that are related to the cause of learned helplessness to helpless clients. Although experiencing controllable events are effective against learned helplessness, this method is not without its limitations. Firstly, this method is more complicated as one would have to

prepare those controllable events or solvable solutions beforehand. Next, the second limitation is that solvable problems related to the task that caused learned helplessness in the first place may not always be available. Compared to using controllable events, Langerian mindfulness is more direct and can be practiced anytime once an individual learned how to practice it.

Next, Hooper and McHugh (2013) studied whether using cognitive defusion to manage unwanted thoughts associated with learned helplessness can reduce its negative effects. Findings from this study demonstrated that instructing participants to observe and label one's thoughts (''I am having the thought that I am no good'') can alleviate the effects of learned helplessness. However, as the instruction of cognitive defusion was given to participants before learned helplessness was induced, the results of the Hooper and McHugh's (2013) study can only demonstrate the effect of cognitive defusion in preventing learned helplessness, but not as a way to alleviate the effects once learned helplessness already occur. Additionally, cognitive defusion requires more practice to be effective as compared to Langerian mindfulness. This is because cognitive defusion requires one to pay attention towards one's thoughts that are abstract, whereas in Langerian mindfulness, attention is focused on tangible objects in the environment that one can observe. Thus, we argue that Langerian mindfulness is easier to practice as compared to cognitive defusion.

Additionally, Ulusoy and Duy (2013) found that a 10-week psychoeducation program that is based on cognitive-behavioural therapy is ineffective in decreasing learned helplessness. Based on the several limitations of the current literature about ways to alleviate learned helplessness, it can be seen that the investigation of possible ways to reduce the impact of learned helplessness is vital in suggesting a new coping method against learned helplessness.

Finally, Langerian mindfulness has been repeatedly suggested by researchers to be able to reduce learned helplessness (Langer, 1989; Pagnini et al., 2016). However, no experimental study has been conducted to validate this relationship to date. Thus, it is vital to have empirical evidence to support the use of Langerian mindfulness against learned helplessness.

1.2 Significance of Study

Firstly, the theoretical significance of this study is that it can fill the research gap in Langerian Mindfulness literature. As mentioned above, this study is the first of its kind to explore the relationship between learned helplessness and Langerian mindfulness, or any other types of mindfulness. So, this study can bring valuable theoretical insights and statistical evidence to extend the work of Ellen Langer. Next, although Langerian mindfulness has been repeatedly associated with learned helplessness in past literature, the explanation on its mechanism provided is insufficient and vague. For example, the explanation given by Pagnini et al. (2016) is that learned helplessness is a form of mindlessness in which individuals mindlessly carry associations made in the past to the present moment. Next, being mindful prevents an individual from relying on past associations, and thus learned helplessness will not occur. This explanation is insufficient as how mindfulness prevents one from relying on past associations is not clarified. Therefore, the second theoretical implication is that this study proposed an explanation on the mechanism of Langerian mindfulness by using the Informational Theory of Learned Helplessness (Krofta, 1993).

Other than that, the practical significance is that this current study proposes a new, effective, and easier-to-practice method to reduce the effects of learned helplessness compared to the methods proposed by past studies. With this, the current study can positively impact the general population by providing them with a self-help technique to deal with real-life helpless

events such as coping with repeated failures. Moreover, practicing mindfulness as a self-help

technique has become increasingly popular in recent years. As such, this study can expand the

benefits of practicing mindfulness, specifically through noticing new things. Finally, to our

knowledge, Langerian mindfulness has not received as much research attention as meditative

mindfulness proposed by (Kabat-Zinn, 1986). Experimental manipulation of Langerian

mindfulness is still lacking in the current literature. Thus, this study can provide future

researchers with a guideline for Langerian mindfulness manipulation in experiments.

1.3 Research Objective

1.   To examine the effectiveness of Langerian mindfulness practice in reducing learned

     helplessness among undergraduates in Malaysia.

1.4 Research Question

1.   Can Langerian mindfulness practice effectively reduce learned helplessness among

     undergraduates in Malaysia?

1.5 Research Hypothesis

Hypothesis 1

   H_0 : Langerian mindfulness practice has no impact on learned helplessness among

         undergraduates in Malaysia.

   H_1 : Langerian mindfulness practice has significantly reduced learned helplessness

         among undergraduates in Malaysia.

1.6 Conceptual Definitions

1.6.1 Learned Helplessness

         Learned helplessness refers to a phenomenon repeatedly exposed to the uncontrollable

outcome and failure resulting in an individual developing maladaptive thoughts to their ability or

efforts in the future (Biber & Başer, 2014). People learned that they lack control over the

environmental events, which leads them to alter the situation after various attempts of failure.

Besides, the learned helplessness model assumes that the previous experience will be interfering

with the following learning as the individual exposes to the uncontrollable outcome.

Subsequently, the exposure to the uncontrollable outcome will lead to motivational deficits and

short-term emotional disturbances (Reed et al., 2001). When people feel that they have no

control over their situation, they may begin to behave helplessly. This action can lead people to

overlook opportunities for relief or change their maladaptive thoughts.

1.6.2 Langerian Mindfulness

Mindfulness is defined as a state of awareness of being in the present moment, non-

judgmentally (Haigh et al., 2010). It requires the management of attention and awareness

towards moment-to-moment experiences (Kiken & Shook, 2011). In the Western perspective of

mindfulness, Ellen Langer defined the concept of mindfulness as the process of creating a new

category and being sensitive to the novelty changes in the present context (Langer, 1992).

Langerian mindfulness is defined as the simple process of actively noticing the new category and

drawing novel distinctions (Davenport & Pagnini, 2016). There are four primary elements of

Langerian mindfulness, such as novelty seeking, novelty producing, flexibility, and engagement

(Pirson et al., 2012). The concept of Langerian mindfulness is embedded with the awareness that

reality is constantly changing, and people have to be aware of the novel distinctions in the

present moment. Also, the construct of Langerian mindfulness indicated that when people

actively drawing the distinctions among the environment, it keeps them situated and become

aware of the present moment and the perspective of their actions. With that, it will force people

to become aware and stay in the present moment. Next, people who are mindful are sensitively

aware of the environment and the context, and they will then create a new category of thoughts and have multiple perspectives in problem solving (Langer & Moldoveanu, 2000). The previously established thoughts will be reduced while people are aware of multiple perspectives from themselves. Additionally, it will help them increase engagement in the present moment and promote mind-openness to an individual (Langer, 1992).

1.7 Operational Definitions

1.7.1 Learned Helplessness

Learned helplessness will be measured by using Learned Helplessness Scale (LHS) and Anagram-Solving Task. Learned Helplessness Scale (LHS) was developed by Quinless and Nelson (1988), and it is a self-reported scale. The highest score indicated a high level of learned helplessness. Besides, the anagram-solving task is used to assess the performance of perceived learned helplessness (Hommel et al., 2006). The lower anagram accuracy indicated a higher level of learned helplessness.

1.7.2 Langerian Mindfulness

Langerian Mindfulness will be measured by Positive State of Mindfulness Scale (PSMS) developed by Ritchie and Bryant (2012). PSMS was designed based on Langer's concept of mindfulness in positive contexts. Besides, PSMS is a self-reported scale, and it aimed to access the state of positive mindfulness. PSMS is measured by using three dimensions, which include Focused Attention, Novelty Appreciation, And Open-Ended Expectation. Focused attention is the centre of mindfulness, and it refers to the individual being fully immersed and attending to the present moment. Moreover, novelty appreciation is referred to a state of being appreciative of receiving novelty during the present moment. Open-ended expectation refers to the individual's

experiences of uncertainty and the open-ended expectation towards the contexts. The higher

score of each dimension indicated a higher level of mindfulness.

Chapter II

Literature Review

2.0 Learned Helplessness

The concept of learned helplessness was first presented half a century ago, by Overmier and Seligman (1967). They placed the dogs in a shuttle box and exposed them to inescapable shocks. After a few trials, the dogs passively accept that they could not leave the shuttle box, ended up the dogs did not even try to escape from the box. Seligman and Maier (1967) also conducted another experiment with dogs; they reported that dogs learned their responses would not contribute to the outcomes, meaning that they do not believe their actions could change the results. Hence, their efforts to escape are influenced by this learning. Learned helplessness was then defined as "the failure to escape shock induced by uncontrollable aversive events" through a study of dogs (Seligman & Maier, 1967).

Thereafter, the learned helplessness concept became a well-known psychological phenomenon, and the researchers imposed learned helplessness on animals such as rats (Kim et al., 2016; Muneoka et al., 2020; Su et al., 2016), honeybees (Dinges et al., 2017), and flies (Batsching et al., 2016 & Yang et al., 2013). Nevertheless, do Nascimento et al. (2016) experimented learned helplessness on Zebrafish as Zebrafish is a teleost fish typically used in neurobehavioral studies, and a depression-like model has not yet been validated. The findings found learned helplessness among Zebrafish in the experimental group. This is because the researchers reported that it is harder for Zebrafish in the experiment group to learn to avoid the aversive stimulus; therefore, they were reported to have a higher average duration to escape compared to the other groups. The learned helplessness studies on animals have a vast contribution to psychology, especially to depression. This is because the animal model shares

similarity with the performance depression patient, which is the behaviour of stopping to try in an aversive situation (Abelaira et al., 2013; Cheng et al., 2018; Chourbaji et al., 2005; Overmier & Seligman, 1967). Thus, the learned helplessness model has played a vital role in investigating the effectiveness of anti-depression drugs (Kishimoto et al., 2016; Shirayama & Hashimoto, 2016).

With the animal model, learned helplessness has now been extended to individuals' inability to pursue, use, or learn adaptive instrumental responses (Nuvvula, 2016). Given that the old hypothesis did not differentiate between the uncontrollable effects for all people (universal) and those uncontrollable only for some people (personal helplessness), the old principle of learned helplessness was then reformulated. According to the reformulated learned helplessness model (Abranson et al., 1978), when individuals experience non-contingency between their response and outcome, they will attribute their helplessness to a cause; the cause can be stable or unstable, global or specific, and internal or external. For example, one attributes the failure to his weak personal abilities that can never be changed. Learned helplessness causes individuals to make lesser efforts to participate in activities that are likely to cause this attributional style, which consequently leads to a more general disengagement in activities and raises the risk of depression (Abramson et al., 1978).

Aside from depression, past studies have indicated various negative impacts of learned helplessness on individuals, such as anxiety (Gürefe & Bakalim, 2018), fatigue (Chung et al., 2017), decrease motivation (Molesworth et al., 2020), and maladaptive perfectionism (Sankaran, 2018). Additionally, learned helplessness is commonly found among students. Past studies revealed that learned helplessness is linked with academic procrastination (Prihadi et al., 2018), mathematic anxiety (Gürefe & Bakalim, 2018), psychoactive drug use and abuse (Adeoye et al.,

2020) as well as absenteeism and course withdrawal (Lee & Carson, 2014). Prihadi et al. (2018) explained that students committed academic procrastination due to learned helplessness as they believe that they are incapable of finishing tasks well. Likewise, Gürefe and Bakalim (2018) analyzed findings from 277 participants and found a positive and significant relationship between mathematic anxiety and learned helplessness. They further explained that students who demonstrate learned helplessness in mathematics lose faith in their mathematical ability; they choose social science subjects that do not include mathematics. In accordance with the research above, Lee and Johnston-Wilder (2017) also claimed that learned helplessness could hinder the development of students' mathematical resilience, which is defined as a desire to make efforts to improve fluency and an ability to obtain any resources needed to solve any obstacles related to mathematical development. Specifically, Lee and Johnston-Wilder (2017) pointed out a student may accidentally forget one out of all the steps in a mathematical calculation and always get the wrong answer. If this repeatedly occurs over time, the students will learn that the right answer is not obtained through their initiative or hard work. Students will then assume that their commitment is not adequate to achieve learning progress in mathematics and that the students will put less effort in the next time.

2.1 Langerian Mindfulness

Mindfulness refers to an individual being in a state of awareness in the present moment, non-judgmentally (Haigh et al., 2010). There are numerous research indicated that the mindfulness practice has a significant impact on our society as mindfulness can improve well-being and emotional reactivity (Keng et al., 2011; Weinstein et al., 2009), enhance psychological well-being (Eberth & Sedlmeier, 2012), reduce unpleasant thoughts process such as rumination (Chambers et al., 2007; Ramel et al., 2004), improve psychological health and academic

achievement (Bennett & Dorjee, 2015; Keng et al., 2011), enhance affective symptoms and

attention (Bueno et al. 2015), improve depressive symptoms (Chambers et al., 2007), and

promote stress management and reduce stress (Jha et al., 2010; Weinstein et al., 2009).

According to the current literature, mindfulness can be identified into two main categories,

which are the Eastern approach and Western approach (Khoury, 2017).

2.1.1 Eastern Approach of Mindfulness

The Eastern approach of mindfulness, known as Buddhist mindfulness, has shared a

similar construct with mindfulness (Shonin et al., 2014). The Buddhist mindfulness focuses on

maintaining the awareness of the present moment by involving the interaction between the mind,

body, and context (Stanley, 2013). In the Buddhist perspective of mindfulness, it aimed to

practice mindfulness meditation for long-term spiritual development (Shonin et al., 2013) by

including the non-self, without attachment, fleetingness, and being nature in internal self

(Khoury et al., 2017).

2.1.2 Western Approach of Mindfulness (Jon Kabat-Zinn)

On the other hand, Khoury et al. (2017) stated that Western mindfulness-meditation and

Langerian mindfulness are the two approaches that are particularly outstanding among the

Western approach of mindfulness. Jon Kabat-Zinn developed the Western mindfulness-

meditation, and the concept was originated from the Buddhist perspective of mindfulness

(Rothwell, 2006). Kabat-Zinn's mindfulness is aimed to direct the attention of an individual to be

fully aware in the present moment, non-judgmentally (Hart et al., 2013; Khoury et al., 2017).

The primary focus of Kabat-Zinn's mindfulness is meditation-based mindfulness and

Mindfulness-Based Stress Reduction (MBSR), which is intended to decrease the stress in the

clinical setting (Kabat-Zinn at al., 1986). The past study reviewed the MBSR, indicated that it

has a significant effect on reducing depression, anxiety, and stress (Gotink et al., 2015).

2.1.3 Western Approach of Mindfulness (Ellen Langer)

Nevertheless, the concept of Langerian mindfulness is different from Buddhist

mindfulness and Kabat-Zinn's mindfulness. In fact, Langerian mindfulness stresses the

awareness of the present moment by actively drawing the novel distinction in the contexts

(Langer & Moldoveanu, 2000) whereas Buddhist mindfulness and Kabat-Zinn's mindfulness are

focused on the mindfulness meditation process (Khoury et al., 2017). There are some positive

consequences during the process of drawing novel distinctions such as sensitive to one's

environment, become openness to the incoming information, the continuous creating new

category to form a new perception and improve the awareness of an individual in forming

multiple view in problem solving (Langer & Moldoveanu, 2000).

According to Langer (1992), Langerian mindfulness has been viewed as a dual concept of

mindfulness, namely mindfulness and mindlessness. Langer (1989) viewed mindfulness as

conscious awareness, an active process of information that can notice and draw the novelty

distinction in the present moment (Langer, 1992). Flexibility is one of the main elements in the

process of mindfulness (Brown et al., 2007). It allows an individual to form multiple

perspectives and greatly adapt to various environments (Haigh et al., 2010). Mindfulness can

attain the flexibility of awareness and attention of an individual as it allows people to achieve

distinct awareness (what is happening) and focused attention (details of contexts) in the current

situation (Brown et al., 2007; Fatemi, 2020). When people become flexible in creating a novelty

category, they can adapt to the new situation flexibly by applying the present experiences instead

of relying on past experiences (Fatemi, 2020).

Conversely, on the opposite side of mindfulness, mindlessness is a state of mind in which an individual is overly dependent on the previously established category or experiences (Langer, 1992). Mindlessness is a minimal process of information, the inflexibility of cognitive states, and consists of low attention to the current contexts (Langer et al., 1989). Unlike mindfulness, mindlessness will only form the single and inflexibility perspective to the information (Langer, 1992; Pagnini et al., 2018), which lead an individual unaware of the constant changes, ignore the potential meaning, and denial the possible way of understanding in the contexts (Davenport & Pagnini, 2016; Langer, 1992). Besides, the mindlessness concept is a fixed functional mind and involves automatic processing that is constantly relying on the fixed schema or category on the past (Langer, 1992). Moreover, Langer (2011) stated that mindless people would become undoubted to the present moment when they are certain with their knowledge or experiences as the information will automatically process according to the fixed schema (mindlessness). When the people locked themselves with the fixed schema, they cannot have novelty information (Fatemi & Langer, 2018) and become unaware of the present moment (Langer & Moldoveanu, 2000). The main characteristics of depression, anxiety, and irrational thoughts are attached to the fixed categories or schema (Pagnini et al., 2018).

The primary construct of Langerian mindfulness is embedded with the awareness of the reality that is constantly changing in the surrounding (Davenport & Pagnini, 2016). Langer (1989) referred mindfulness as a simple process of attending to novelty changes and drawing novelty differences. Moreover, Ellen Langer's mindfulness concept is significantly different from meditation-based mindfulness (Khoury et al., 2017) as Langerian mindfulness does not attain through the meditation process (Fatemi, 2020; Pagnini et al., 2018). In fact, Pirson et al. (2012) stated that Langerian mindfulness works under the primary components, including (1) novelty

seeking, (2) engagement, (3) flexibility, and (4) novelty producing. Likewise, Brown and Ryan (2003) defined mindfulness as a condition to receive attention and awareness of the present moment and experience. When the individual is paying attention to the vast or subtle changes of reality, it will compel him or her to become aware of here and now (Davenport & Pagnini, 2016). By practicing Langerian mindfulness, the mindful individual will become sensitive to the reality changes and form the novel categories to manage the perception and multiple perspectives on problem-solving (Langer & Moldoveanu, 2000). With that, the increased level of multiple perspectives will decrease the fixed category and improve an individual's engagement and mind-openness (Langer, 1992).

Past studies of Langerian Mindfulness. Several past researches were conducted to study the effects of Langerian mindfulness. Pagnini et al. (2018) conducted a study through longitudinal online mindfulness stress-based reduction with 156 participants with Multiple Sclerosis (MS) and results showed that Langerian mindfulness is significantly related to the high quality of life, low level of depression, anxiety, and fatigue, and have a good quality of sleep-in people with MS. Next, the study argued that Langerian mindfulness could achieve a better experience of hypnosis through the process of creating and novelty-seeking new things in the present moment (Fatemi, 2020). The study above clarified that the underlying process of Langerian mindfulness is mindfully seeking the novelty changes in reality, while hypnosis is aimed to help people to detach the attention from negative objects or thoughts. When an individual is practicing Langerian mindfulness during the hypnosis process, he/she will become mindful and sensitive, noticing the new changes in the context. With that, Langerian mindfulness is able to assist people in disconnecting from negative thoughts during the hypnosis process (Fatemi, 2020).

Furthermore, Pagnini et al. (2018) illustrated that Langerian mindfulness could increase students' social-emotional learning. Students' social-emotional learning will improve as Langerian mindfulness allowed them to form multiple perspectives on their academics and be immersed in school's different cultural and social backgrounds. Another study by Pagnini et al. (2018) illustrated that students could achieve a better quality of life and psychological well-being by practicing Langerian mindfulness.

Besides, Baltzell and McCarthy (2016) proposed integrating Langerian mindfulness and sports psychology. By practicing Langerian mindfulness, it can help the athletes bring attention to fully engaged with the flow of the specific sports and help them to achieve more extraordinary sports performance. Similarly, James (2018) indicated that the athlete could be immersed in different training sessions immediately through flexibility adapt to moment-to-moment by practicing Langeian mindfulness. The Langerian mindfulness can achieve a greater flow of experiences and reduce the mindless activity as it is practicing moment-to-moment experience in reality (James, 2018). Likewise, Berrir (2012) showed that there is a significant relationship between mindfulness and sport activity by practicing Langerian mindfulness.

2.2 Learned Helplessness and Langrian Mindfulness

Learned helplessness is a concept that is repeatedly mentioned by Ellen Langer in her work. According to Langer (1989), learned helplessness stems from mindlessness because past experiences are mindlessly used to judge the present situation, thus limiting our present reactions and reducing our perception of control. This is further explained by Pagnini et al. (2016) that when an individual is mindful, he/she do not have to not rely on the narrow perspective created based on past experiences; instead, the individual can look for new aspects of the present situation, and thus make flexible adaptations. As the mechanism of how Langerian mindfulness

alleviates learned helplessness is explained in the theoretical framework, this section will focus on reviewing past studies that examined the relationship between Langerian mindfulness and constructs that are related to learned helplessness.

Top-down and bottom-up processing are two different ways of guiding our attention to process stimuli in the environment (Corbetta & Shulman, 2002). Top-down processing happens when our knowledge and expectations guide us to focus on specific parts of our environment or situation. This process involves the use of our mental representations to bias the processing of incoming information so that we can process information more efficiently by ignoring irrelevant stimuli (Gilbert & Li, 2013). In contrast, bottom-up processing is a stimulus-driven process in which we process sensory information as it is, without prior knowledge and expectations. This process is triggered when we detect unexpected, novel or salient stimuli in our environment (Anderson, 2017).

According to Khoury et al. (2017), an overreliance on top-down processing is the root cause of mindlessness. This is because rigidly relying on memories, beliefs, and expectations can interfere with our ongoing experience, preventing us from experiencing bottom-up, present-moment sensations (Siegel, 2007). This happens when we are certain about our knowledge, and we process information automatically without considering the current context (Dunoon & Langer, 2011). Evidence from an Event-Related Potential (ERP) study conducted by Barron et al. (2011) suggested that mind-wandering, which is a state similar to mindlessness, reduces the awareness and processing of novel stimuli regardless of whether or not they are task-related.

After that, mindlessness caused by an overreliance of top-down processing will lead to learned helplessness because individuals in a mindless state will expect failure based on what they experienced in the past, without realizing that the context has been changed (Pagnini et al.,

2016). This negative expectation will then blind them towards the possibility and opportunities for success, ultimately resulting in motivational, cognitive and affective deficits.

Langerian mindfulness is practiced through actively noticing new things about or in the current situation (Philips & Pagnini, 2016). As noticing new things is a bottom-up approach of information processing, it brings individuals out of their evaluative minds and into the present moment (Langer, 2009). Indeed, past studies have shown that the act of noticing novel stimuli in the environment can interrupt top-down processing (Carretié, 2014, Vosselet al., 2013). This is because noticing new things diverts our attention from our minds, such that we become fully engaged in the present moment. Thus, Langerian mindfulness can alleviate learned helplessness as noticing new details disrupts individuals' top-down focus of a situation.

2.3 Theoretical Framework

The Informational Theory of Learned Helplessness (Krofta, 1993) is used to conceptualize the cognitive process that occurs when failures in the problems-solving lead to learned helplessness. It postulated that people are typically motivated to construct mental models that will help them control and predict their environments. When people approach a problem, they develop a mental model by engaging in various problem-solving activities such as trying to understand the pattern of incoming stimuli, differentiating important information from unimportant information, as well as forming a hypothesis for the solution and testing it based on evidence. However, when applying these problem-solving activities to an uncontrollable event, their efforts will be futile, and they will still be faced with uncertainties. The repeated failures of trying to form a reasonable explanation to the stimuli experienced will then lead to a state of cognitive exhaustion in which individuals will temporarily reduce the act of constructing a mental model. In this state of cognitive exhaustion, individuals will have difficulty producing

new thoughts and ideas, and this will ultimately result in a performance deficit in subsequent tasks.

This theory also posits that the state of cognitive exhaustion is context-dependent, thus, changing the situation and goals can help individuals regain cognitive control. However, when helpless individuals cannot "leave the field", that is, cannot escape from the situation in which learned helplessness was first experienced, the state of cognitive exhaustion will then be prolonged and learned helplessness will be generalized to subsequent tasks. For example, suppose a student in a mandatory statistics course fails to understand important statistical concepts taught by his lecturer despite applying all his mental efforts. When this happens for two consecutive lectures, cognitive exhaustion will undermine the student's understanding of the subsequent lectures, even though they might be easier. This happens because the student is stuck within the same field when learned helplessness occurs, in this case, the mandatory statistic course. In essence, learned helplessness occurs when people fail to develop new mental models required to produce change and cannot withdraw themselves from the field in mental models required to produce which they feel helpless.

The main principle of Langerian mindfulness is the acceptance of uncertainty. According to Pagnini et al. (2016), mindfulness is the understanding that reality is inherently uncertain and unpredictable as it is constantly changing. However, when we are mindless, we will not be able to detect the changes in our environment, and thus we view reality as stable and unchangeable (Caplan & Schooler, 2003). Langerian mindfulness counteract mindlessness by grounding individuals in the present moment through the process of actively noticing new details in the things we thought we knew well. In doing so, we can be aware of the constantly changing nature of reality and come to accept the uncertainty of things (Khoury et al., 2017). Acceptance of

uncertainty then opens our mind to search for new information, and with new information, there

may be more opportunities to act (Langer, 1989)

The Informational Theory of Learned Helplessness suggested "leaving the field" to

reduce cognitive exhaustion. In this study, we hypothesized that withdrawing oneself from

uncontrollable situations is not necessary when we can apply Langerian mindfulness. This is

because the process of actively seeking and noticing new details in the things we know well will

break down our assumption that our environment is unchangeable. Essentially, we do not have to

"leave the field" when we realize that our field is constantly changing and presents many new

opportunities. Going back to the previous example, practicing Langerian mindfulness through

noticing new details about the statistical course can allow the student to be aware and accept the

fact that nothing he knew about the course is certain. Whereas previously he is certain that the

whole course is very difficult, actively seek and notice new concepts that are easier in other

lectures of the statistical course can break this assumption. In sum, we hypothesize that when

individuals realize the changing nature of their problems, cognitive exhaustion can be alleviated

and the cognitive effort to form new mental model can be initiated again.

2.4 Conceptual Framework

In the current study, the variables involved are Langerian mindfulness and learned

helplessness. This conceptual framework is based on The Informational Theory of Learned

Helplessness (Krofta, 1993) that explained changing the situation and goals can help individuals

regain cognitive control. With the statement above, the current study attempts to understand the

Langerian mindfulness practice on reducing the effect of learned helplessness. Langerian

mindfulness as the independent variable, while learned helplessness as the dependent variable

(refer to Figure 1). More specifically, Langerian mindfulness would be assessed to determine its

effectiveness as a newly proposed method for reducing learned helplessness among participants.

Figure 1

The Schematic Diagram of the Conceptual Framework of Current Study
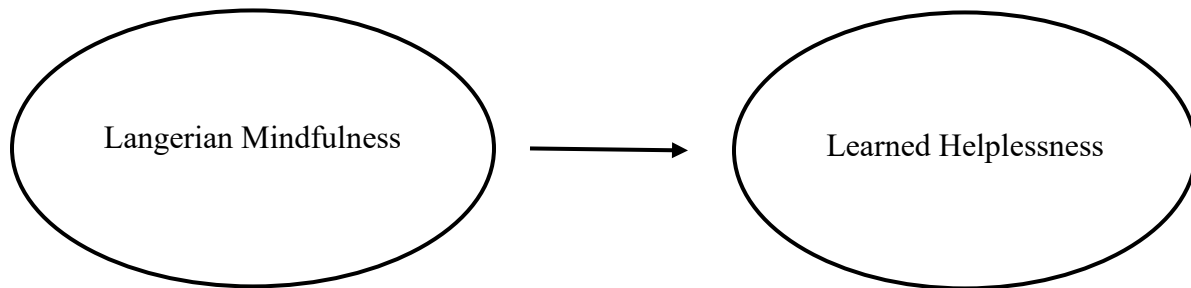
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   ┌─────────────────────┐              ┌─────────────────────┐
   │                     │              │                     │
   │  Langerian          │ ──────────▶  │  Learned            │
   │  Mindfulness        │              │  Helplessness       │
   │                     │              │                     │
   └─────────────────────┘              └─────────────────────┘
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Chapter III

Methodology

3.0 Research Design

An online experimental research was conducted through the between-subjects design in this quantitative study due to the COVID-19 pandemic. The between-subjects design is an experimental research that randomly assigns each participant to only one experiment condition, such as a treatment group and a control group (Charness, 2012). In this study, the between-subjects design is used to measure whether there are any differences between different groups, including the participants under the process of Langerian mindfulness (Treatment group) and the participants under the process of reading the BBC newspaper article (Control group). Besides, the convenience and snowball sampling methods were employed as the method of data collection. Furthermore, the deception concept was used in this experimental study to prevent the participants from being aware of the actual hypothesis being studied, which may affect the accuracy of the results. Lastly, a debriefing section was conducted to reveal the real hypothesis of the current study to participants at the end of the experiment. Before conducting the online experimental research, a pilot study was first conducted to ensure the effectiveness of manipulation, determine the sample size, ensure the feasibility of the study, and enhance the research design. The online applications Skype and Microsoft Teams were used to conduct the online experimental study, while the online software, Qualtrics was used in data collection.

3.1 Sample Size

The sample size of the current study was calculated by using G*Power Version 3.1. Besides, the effect size of the current study $d = 0.57$, one-tail, statistical power level of 0.95, and error probability level of 0.05 was obtained by calculating the descriptive statistics of the

anagram task from the pilot study. Based on the G*Power sample size calculator, the sample size for the current study is 136 for two groups (see Appendix A).

In the current study, a total of 206 responses were collected. Firstly, 24 responses were removed due to partial completion. Next, one response from a participant who failed to understand the instructions of anagram was removed. Subsequently, nine more responses were removed as they do not meet the attention checking requirement. Also, four responses from non-Malaysians (international students) were excluded from the data analysis. Finally, three outliers in the LHS score were identified through boxplot. The outliers were removed as it reduced the consistency of Learned Helplessness between the two groups. After data cleaning, the retained sample size was ($n = 165$), where the Langerian mindfulness group and Control group had ($n = 83$ and $n = 82$) respectively.

3.2 Data Collection Procedures

3.2.1 Inclusion and Exclusion Criteria

According to Garg (2016), the inclusion criteria are to identify the study population consistently, reliable, uniform, and objective, while the exclusion criteria include factors or characteristics that make the recruited population ineligible for the study. Hence, the inclusion criteria for the current study are (1) 18 years old to 25 years old, (2) full-time undergraduate, (3) Malaysian, (4) has not done our pilot study before, (5) has given consent to participate in the study and (6) answer correctly for all attention-checking items. In contrast, the exclusion criteria would be (1) below 18 years old or over 25 years old, (2) not a full-time undergraduate (3) not a Malaysian (4) has done our pilot study before (5) refused to give consent to participate in the study and (6) answer wrongly for one or more of the attention-checking items. For criteria (4), the current study obtained the participant's name at the demographic session; this was to cross-

check with the pilot study name list. Therefore, those who did not provide their full name were excluded from the current study.

3.2.2 Procedures of Obtaining Consent

An informed consent form was attached at the beginning of the online self-report questionnaires to ensure all recruited participants took part voluntarily and the privacy, potential risks of the participants, was stated clearly. There were also "I agree" and "I do not agree" buttons below the consent form as a signification of participants' consent. Also, all participants were informed about the actual topic at the end of the session with an explanatory infographic poster. Nevertheless, a debriefing video was sent to the participants via WhatsApp upon their completion of the experiment. The researchers had also answered all confusion, doubts, and inquiries from participants. The last two steps were intended to ensure that all participants understand the actual purpose of the online experiment and minimize the negative effects of learned helplessness and deception.

3.2.3 Description of Data Collection Procedures

Firstly, the data collection process began with determining the target population, namely undergraduates in Malaysia. Next, the time frame for data collection was set, which is four weeks (from 1/02/2021 to 24/02/2021). Nevertheless, the current study implied convenience and snowball sampling method; the recruitment message was then disseminated through social media platforms such as WeChat, Instagram, Facebook, WhatsApp, and Microsoft Teams. The participants registered themselves in the Google form and chose an available slot in the Google form. Next, to ensure every participant understands the rules of the experiment, a pre-experiment briefing was conducted for all the participants. The online experiments were conducted via two video conferencing software, Skype and Microsoft Teams. Following the

experiment procedure, a Qualtric link was given to the participants to start with the experiment. Lastly, the data collection process was continued by analyzing the raw data and discussing as well as implementing the current study findings.

3.2.4 Dates/Duration of Recruitment Repeated Measures or Follow-Up

The follow-up was conducted on the same day after the experiment. A debriefing video and a short message regarding the real intention of the experiment were sent to every participant through WhatsApp.

3.2.5 Agreement and Payment

The current study has chosen 50 lucky participants and gave them a RM 10 grab food gift card for their voluntary participation. The selection criteria were participants who had completed the study within one hour and submitted a screenshot picture with their full name in google drive. After the data screening process, the total number of eligible participants for the lucky draw session was ($n = 100$). The current study used an online lucky draw method named Random Name Picker to choose the 50 lucky participants. After the lucky draw session, all the participants were informed about the lucky draw result. Next, the RM10 grab food gift cards were purchased and then sent to the 50 lucky winners through e-mail. Lastly, a congratulations message was sent to the lucky winners, while the rest received an appreciation message.

3.3 Instruments/ Questionnaires

3.3.1 Manipulation of Learned Helplessness

Learned helplessness was induced by using a computerized version of the standard concept formation task (Hiroto & Seligman, 1975; Levine, 1971). In this task, participants were shown a series of two different stimulus patterns. Each pattern consisted of four dimensions, and each dimension consisted of two different values: (a) shapes (square or circle), (b) colour (red or

green), (c) letter ("A" or "T"), and (d) font size (large or small). Participants were instructed that one of the patterns was pre-determined by the researchers to be "correct" based on one of its values (e.g. red), and they will receive a "correct" feedback if they choose the pattern that contains that value. Hence, the participant's task was to choose one of the two patterns that they think is correct. Then, based on the computer-generated feedback ("correct" or "incorrect"), they must find out the pre-determined "correct" value and get as many correct answers as possible. Each participant was given four sets of 10 trials, and each set contained a different value as being correct. At the end of the 10th trial, participants' performance was displayed (e.g., "Your score for Question 1 is: 4/10"). After seeing their performance, the last question of each set displayed the 8 values separately and instructed the participants to choose which value out of the 8 that they think was pre-determined to be correct.

However, the participants did not know that the feedbacks that they received were randomly generated, and there was no way to figure out the solution to this task. The task was unsolvable as it was done to induce the feeling of learned helplessness. To ensure the consistency of the current study, the feedback was randomly generated beforehand, meaning that all participants received the same amount of "correct" and "incorrect" feedback regardless of their choices. For instance, all participants scored 4 out of 10 for their first set of 10 trials. Moreover, the last question of each set that asked participants to choose 1 out of 8 values was also unsolvable, as all participants received an "incorrect" feedback regardless of their choices.

3.3.2 Learned Helplessness Scale (LHS)

The Learned Helplessness Scale (LHS) developed by Quinless and Nelson (1988) was used to measure learned helplessness. A modification in the instruction of the scale had been made in which participants were instructed to answer the scale based on their feelings towards

the concept formation task. This scale consisted of 20 self-report items (e.g., "When I perform

poorly, it is because I don't have the ability to perform better."). This scale is scored on a four-

point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*), with a total score that

ranges from 20 to 80. A higher score indicates a greater degree of learned helplessness. The LHS

has shown high internal consistency reliability ($\alpha = .85$; Quinless & Nelson, 1988). Moreover,

LHS displayed adequate concurrent validity as it correlates significantly and positively with

Beck's hopelessness scale ($r = .252$; Beck et al., 1974) and negatively with Rosenberg's self-

esteem scale ($r = -.622$; Rosenberg et al., 1965).

3.3.3 Langerian Mindfulness Practice

Participants in the Treatment group were given a mindfulness intervention instruction

similar to the instruction used in (James, 2018) that guides them through the process of noticing

new details. The instructions included noticing three new details about their body, about an

object, and about their environment. Afterwards, the participants were instructed to take deep

breaths, close their eyes and recall the nine new details that they noticed for two minutes.

3.3.4 BBC Newspaper Article

An article titled "*Diesel vehicles are important for the UK economy, says industry*" was

used as a control condition for Langerian mindfulness treatment ("Diesel vehicles important",

2017). This is replicated from a mindfulness study conducted by Mantzios et al. (2019).

Participants were asked to read through the news article as many times as they like before

writing a summary of the article in two minutes. The aim of this task was to let participants go

through a bogus task with a similar duration that will not produce any emotional reactions that

can influence their performance in this study.

3.3.5 Positive State Mindfulness Scale (PSMS)

The Positive State Mindfulness Scale (PSMS; Ritchie and Bryant, 2012) is a nine-item questionnaire that used to measure participants' state Langerian mindfulness. The scale consisted of three subscales, which are focused attention (FA), novelty appreciation (NA), and open-ended expectations (OEE), and each subscale contains three items. The PSMS is rated on a six-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The scale is scored by summing up each subscale separately, and higher scores in each subscale indicate higher levels of the related dimension. Sample items from each subscale include: "My attention is focused on what is happening right now." (focused attention), "I enjoy the newness of this moment." (novelty appreciation), and "Right now I am not sure what to expect." (open-ended expectation). The current study chose the PSMS to measure state Langerian mindfulness, although the three subscales of PSMS do not measure the exact four primary components suggested in the Langerian mindfulness scale (novelty seeking, novelty producing, engagement, & flexibility; Pirson et al., 2012). This was due to PSMS is the only scale in the current literature that measures state Langerian mindfulness to our knowledge. Firstly, PSMS is different from the Langerian mindfulness scale as novelty appreciation refers to enjoying and appreciating new things while novelty seeking refers to being curious and seeking new details in the environment, and novelty producing refers to creating new categories and innovation. Next, open-ended expectation, which is being open to uncertainties, is also different from flexibility, which is being able to consider things from multiple perspectives. However, focused attention did share some similarities to engagement as both constructs describe an active focus of attention to the present moment.

The PSMS demonstrated good internal consistency reliability ($\alpha = .70$; Ritchie & Bryant, 2012). Overall, satisfactory convergent and discriminant validity of the scale were demonstrated as each dimension correlated differently to criterion measures of mindfulness, savoring beliefs, uncertainty tolerance. Evidence for its convergent validity was also found as novelty appreciation, and open-ended expectations were significantly and positively correlated with the Dispositional Mindfulness/Mindlessness Scale (Haigh et al., 2010). Adequate convergent validity was also demonstrated from significant positive correlations between focused attention and novelty appreciation with measures of savoring beliefs (Savoring Beliefs Inventory; Bryant, 2003) and uncertainty tolerance (Uncertainty Tolerance Scale; Dalbert, 1999, as cited in Ritchie and Bryant, 2012). Finally, the authors also found support for predictive validity through experiments that manipulated positive mindfulness. Specifically, participants that went through repetitive and boring tasks scored lower on the novelty appreciation, whereas participants that went through a problem-solving task scored higher on focused attention.

3.3.6 Solvable Anagram-Solution Task

An anagram task derived from past learned helplessness experiments was used to measure the impact of learned helplessness induced in the concept formation task (McLaughlin et al., 2010; Hommel et al., 2006). Twenty solvable anagrams were being shown to the participants, and participants were instructed to unscramble the letters and type their answers in the space provided in the Qualtrics. Each anagram consisted of five scrambled letters, and they were being scrambled in the same order such that all solutions follow the same sequence of 5-3-1-2-4. Participants were informed that they are allowed to try as many times as they want within a 100 second time limit, and all the anagrams can be solved with a pattern. The number of anagrams that participants accurately solved was measured and used as the dependent variable.

3.4 Research Procedures

The ethical approval was obtained from the UTAR Scientific and Ethical Review Board with the reference number of U/SERC/189/2020 before conducting the pilot study and actual study (see Appendix B). The selected independent variable is the Langerian mindfulness, whereas the dependent variable is learned helplessness. There were some issues identified in the pilot study, and the issues were being improved in the actual study.

By referring to Figure 3, the final year project registration form (see Appendix C) and poster (see Appendix D) for the online experimental study was distributed through various online platforms such as Facebook, Instagram, WeChat, WhatsApp, and Microsoft Teams. The purpose of the registration form was to let the participants register timeslots for themselves. The participants were required to fill in their personal details and their available timeslots. The maximum number of participants for each timeslot was 30 people. After the registration process, the researchers had filtered out the registered individuals who were not eligible to participate in the current study. Next, the researchers sent a confirmation message to each participant and added them to the online platform, Skype, or Microsoft Teams respectively (see Appendix E). The purpose of adding the participants to online platforms to conduct the experiment was to offer the participants maximum involvement and minimum external interference in the study. Besides, it was aimed to control the environmental factor. After that, a pre-experiment briefing was conducted to explain the procedure of this study to each participant through the online platform (see Appendix F). The question-and-answer session was conducted after the briefing session to let the participants have a clear direction to the study.

Afterwards, the participants filled up the consent form before starting the study (see Appendix G). The consent form included some important details of the study, namely the

research topic, the purpose of the study, procedures, risk and discomfort, the confidentiality of data, and contact information. A fake title, "*The Effects of Emotional Well-Being on Logical Reasoning and Linguistic Ability among Undergraduates in Malaysia*" was formed to avoid the participant's bias to the topic and minimize the inaccuracy results in the study. The participants were told to go through a series of games in the study with the purpose of assessing the effects of emotional well-being on logical reasoning and linguistic ability.

After filling-up the consent form, the participants were tested with concept formation tasks to induce the learned helplessness in the present moment (see Appendix H). In the concept formation task, the participants were instructed to go through four sets of questions, and each question contained 10 trials (40 questions in total). In each trial, the participants looked at two images simultaneously, with one to the left and another to the right. The images composed of eight different values which included colour (green or red), shape (round or square), font size (big or small), and letter (letter A or letter T). The participants were being told that there was a correct answer in all the trials, and they were asked to guess and choose which side (left or right) contains of the correct value. They immediately received a "correct" or "incorrect" feedback with sound effects after finishing each guessing. However, there was no correct value in all the trials. In other words, all the participants underwent the unsolvable concept formation task to induce the feeling of learned helplessness. Then, the participants were instructed to go through the Learned Helplessness Scale (LHS) to measure their perceived learned helplessness (see Appendix I).

Moreover, they were randomly assigned to either the Treatment group (Langerian mindfulness) or Control group (read and summarize the selected BBC newspaper article). For the participants in the Treatment group, the participants underwent the process of Langerian

mindfulness by noticing three new details (in a total of nine) for body, environment, and objects (see Appendix J). The instruction of Langerian mindfulness was presented in both sound and text versions in the Qualtrics software. They were asked to list down the new details on each body, environment, and object before moving on to the next section. After identifying the nine new details, they were given two minutes to take deep breaths and recall the nine new details that they noticed previously. Conversely, the Control group participants need to read the selected BBC newspaper article (see Appendix K). The BBC newspaper article namely, "*Diesel vehicles are important for UK economy, says industry*" was also being shown in both sound and text version in the Qualtrics software. After participants read through the BBC news, they were given two minutes to write a summary of the BBC newspaper article. In both the Treatment and Control groups, the time limit was pre-determined as 2 minutes by using the Qualtrics software before they proceed to the following section. The participants were unable to skip to the next section within these 2 minutes. Then, the participants filled out the Positive State Mindfulness Scale to measure the perceived mindfulness level of each participant (see Appendix L).

Next, the anagram-solving task was used to measure the participants' level of perceived learned helplessness (see Appendix M). On this task, the participants were given 20 anagrams and asked to unscramble the letters to form a meaningful word. They were asked to answer the anagrams in the capital letter within the time limit of 100 seconds. All anagrams consisted of five scrambled letters and are following the same sequence of 5-3-1-2-4. The participants were told that they can try as many times as they want to figure out the solution patterns within the time limit. They can also submit their answer by clicking on the "submit" button at any time, while the participants who wish to give up may also leave the answer blank and click the "submit" button at any time.

Furthermore, the participants filled out the demographic information (see Appendix N), including name, e-mail address, phone number, age, gender, ethnicity, religion, state of birth, highest education level, higher education institution, and course of study. In addition, a debriefing section was conducted to reveal the real purpose of our study, namely, Langerian Mindfulness on Learned Helplessness through infographic and video (Appendix O). Lastly, the participants were asked to screenshot the last page of the study and post it to Google Drive to fulfill one of the lucky draw session requirements for the token of appreciation. The participants left the Skype or Microsoft Team meeting room after they completed the study. After that, the RM10 grab food gift card was sent to the 50 lucky winners through e-mail (see Appendix P), and the congratulations/ appreciation message was being sent to the participants (see Appendix Q).

Figure 2

The Flow of Research Procedures
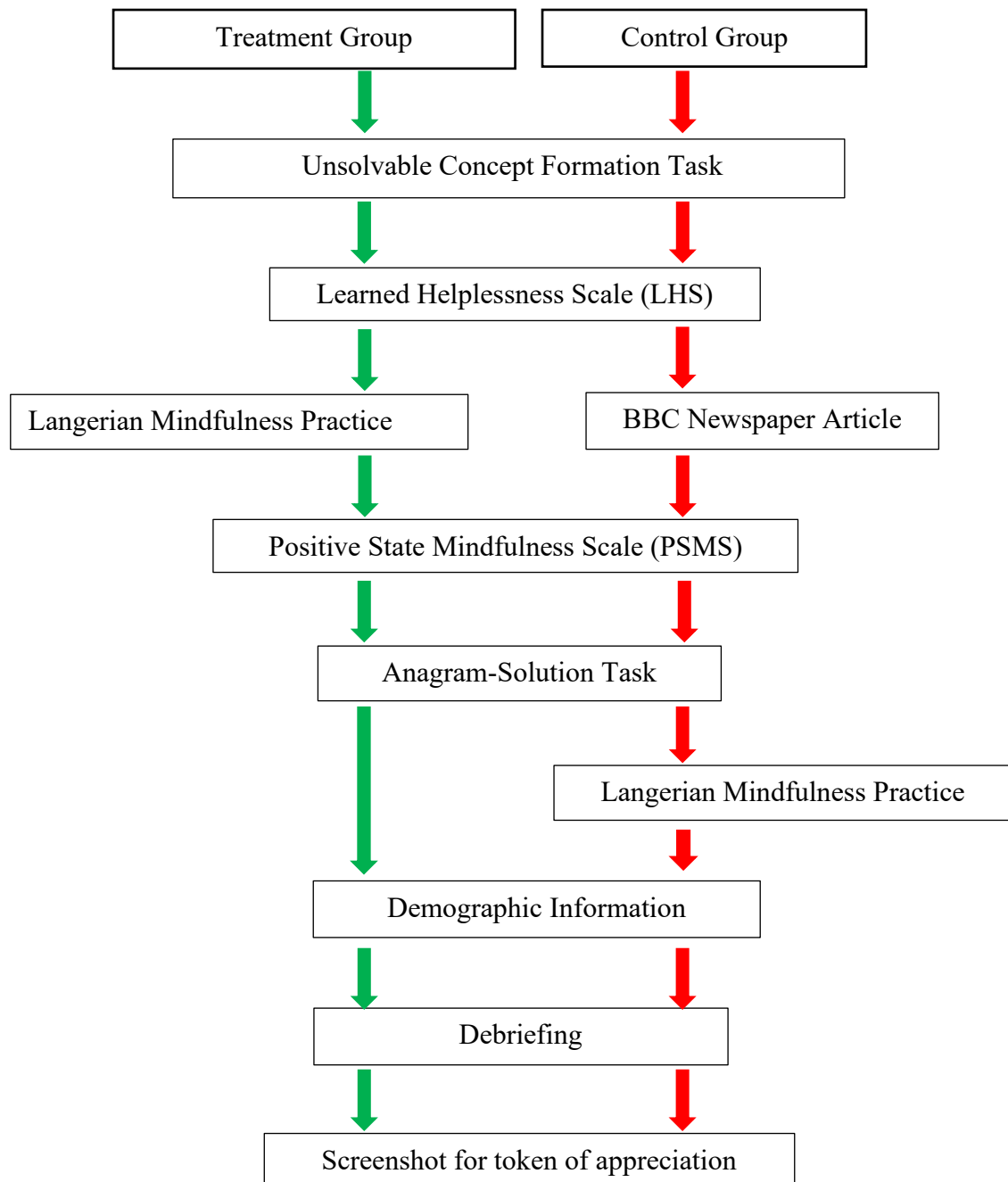
CHAPTER IV

Results

4.0 Pilot Study

A pilot study was conducted to examine the effectiveness of the manipulation of Langerian mindfulness, determine the sample size for the actual study, and validate the feasibility of the procedure of the actual study. A total of 34 participants were recruited and randomly divided into three groups, which were (1) Group A, (2) Group B and (3) Group C (see Figure 3). The main differences between the three groups are that Group A and Group C went through unsolvable concept formation task while Group B went through solvable concept formation task. Next, Group A practiced Langerian mindfulness practice while Group B and Group C read and summarized BBC news article.

In terms of LHS score, there was a statistically significant difference between groups as determined by one-way ANOVA ($F(2,31) = 4.131$, $p = .026$). A Tukey post hoc test revealed that Group C ($M = 52.00$, $SD = 5.510$) scored significantly higher compared to Group B ($M = 45.73$, $SD = 6.335$, $p = 0.28$). However, there was no statistically significant difference between Group A and Group B ($M = 47.09$, $SD = 4.182$, $p = .833$). This result was unexpected as both Group A and Group C went through the same unsolvable concept formation task, and thus should have share the same level of learned helplessness. As the pilot study only recruited 12 participants per group, this result was attributed to the small sample size of the pilot study.

For PSMS score, the FA dimension of the Group B ($M = 12.18$, $SD = 1.834$) and Group A ($M = 12.36$, $SD = 3.171$) were higher than Group C ($M = 11.50$, $SD = 2.541$). Similarly, the NA dimension of the Group B ($M = 13.09$, $SD = 1.814$) and Group A ($M = 12.82$, $SD = 2.926$) were also higher than Group C ($M = 11.58$, $SD = 2.353$). In contrast, the OEE dimension of the

Group B (M = 13.55, SD = 2.067) and Group A (M = 12.27, SD = 2.936) were lower than Group C (M = 14.33 , SD = 1.775). However, no significant difference were found using one-way ANOVA for all three dimensions, which are FA ($F(2,31)$ = .364, p = .698), NA ($F(2,31)$ = 1.296, p = .288), and OEE ($F(2,31)$ = 2.337, p = .113) respectively.

Finally, one-way ANOVA showed no significant difference in terms of the number of anagram questions solved between the three groups ($F(2,31)$ = 1.182, p = .320). The effect size for the actual study (d = 0.57) was obtained through the mean, standard deviation, and sample size of anagram task score between the Group A (M = 15.18, SD = 3.920, n = 11) and Group C (M = 12.17, SD = 6.408, n = 12).

The pilot study results indicated that the manipulation of learned helplessness was effective, but the manipulation of Langerian mindfulness was ineffective. Thus, in the actual study, an improvement in the manipulation of Langerian mindfulness was made in which participants were instructed to pay attention to the difference between the concept formation task and the anagram task (see Appendix R).

Figure 3

The Flow of Pilot Study

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                            ┌─────────────────────┐
          ┌─────────────────┤ Briefing and Consent ├─────────────────┐
          │                 └──────────┬──────────┘                   │
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┌───────────────────┐      ┌───────────────────┐      ┌───────────────────┐
│     Group A       │      │     Group B       │      │     Group C       │
│ (Unsolvable Concept│      │ (Solvable Concept │      │ (Unsolvable Concept│
│  Formation Task)  │      │  Formation Task)  │      │  Formation Task)  │
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          ▼                          ▼                          ▼
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│ Learned Helplessness│     │ Learned Helplessness│     │ Learned Helplessness│
│    Scale (LHS)    │      │    Scale (LHS)    │      │    Scale (LHS)    │
└─────────┬─────────┘      └─────────┬─────────┘      └─────────┬─────────┘
          ▼                          ▼                          ▼
┌───────────────────┐      ┌───────────────────┐      ┌───────────────────┐
│ Langerian         │      │ BBC Newspaper     │      │ BBC Newspaper     │
│ Mindfulness Practice│     │ Article           │      │ Article           │
└──────────┬────────┘      └──────┬────────────┘      └─────────┬─────────┘
           └──────────┐   ┌───────┘                             ▼
                      ▼   ▼                          ┌───────────────────┐
          ┌─────────────────────────────┐           │ Positive State    │
          │ Positive State Mindfulness  │           │ Mindfulness Scale │
          │ Scale (PSMS)                │           │ (PSMS)            │
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                         ▼                                    ▼
          ┌─────────────────────────────┐           ┌───────────────────┐
          │   Anagram-Solution Task     │           │ Anagram-Solution  │
          └──────────────┬──────────────┘           │ Task              │
                         ▼                           └─────────┬─────────┘
          ┌─────────────────────────────┐                     ▼
          │  Demographic Information     │           ┌───────────────────┐
          └──────────────┬──────────────┘           │ Langerian         │
                         ▼                           │ Mindfulness Practice│
          ┌─────────────────────────────┐           └─────────┬─────────┘
          │        Debriefing            │                     ▼
          └─────────────────────────────┘           ┌───────────────────┐
                                                     │ Demographic       │
                                                     │ Information       │
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                                                     ┌───────────────────┐
                                                     │    Debriefing     │
                                                     └───────────────────┘
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4.1 Descriptive Statistics

Table 1 shows the participants' demographic information. The participants' age ranged from 19 to 25, with a mean age of 21.19 (SD = 1.179). A majority of the participants were female (72.7%), and only 27.3% were male. Most of the participants were Chinese (84.2%), followed by Indian (9.7%), Malay (5.5%), and Others (0.6%). 66.1% of the participants were Buddhist, 19.4% of them were Christian, followed by Hindu (6.1%), Muslim (4.8%), and Others (3.6%). All participants were undergraduate students. 79.4% of the participants were from Universiti Tunku Abdul Rahman (UTAR), while the other 20.6% were from other universities across Malaysia such as INTI International University (n = 8), Universiti Malaya (n = 3), Tunku Abdul Rahman University College (n = 2), Universiti Teknologi Mara (n = 2) and many more.

Table 1

Demographic Profile of the Respondents (n=165)

		Frequency	Percentage (%)	Mean	*SD*	Min.	Max.
Age				21.19	1.179	19	25
Gender							
	Male	45	27.3				
	Female	120	72.7				
Race							
	Chinese	139	84.2				
	Malay	9	5.5				
	Indian	16	9.7				
	Others	1	0.6				
Religion							
	Buddhist	109	66.1				
	Muslim	8	4.8				
	Hindu	10	6.1				
	Christian	33	19.4				
	Others	6	3.6				
Institution							
	UTAR	131	79.4				
	Others	34	20.6				

Note. SD = Standard Deviation, Min. = Minimum, Max. = Maximum

4.2 Assumptions of Independent-Sample T-Test

Firstly, the assumption of homogeneity of variances was not met, as Levene's test revealed a significant difference in the variance of anagram score between the treatment and control group; $F(1,163) = 4.173$, $p = .043$. Next, the assumption of normality was examined through skewness, kurtosis, and Kolmogorov Smirnov Test (see Table 2). Z-score for skewness and kurtosis was calculated by using the formulas below.

$$Z_{Skewness} = \frac{Skewness}{SE_{Skewness}} \qquad\qquad Z_{Kurtosis} = \frac{Kurtosis}{SE_{Kurtosis}}$$

According to Kim (2013), the value of Z-score skewness and Z-score kurtosis greater than 3.29 or less than -3.29 indicates a violation of normality of data at $p < 0.05$ level of significance. Generally, no violation was found except for the skewness of the Anagram score for the control group, which had a Z-score of -3.485.

Finally, the Kolmogorov-Smirnov test revealed that only Learned Helplessness scores were normally distributed (see Table 2).

Table 2

Summary on Kolmogorov–Smirnov Test

	Control Group (*n* = 82)		Treatment Group (*n* = 83)	
Variables	Statistic	Significance level	Statistic	Significance level
Learned Helplessness Scale	.088	.170	.094	.064
Focused Attention	.171	.000	.104	.028
Novelty Appreciation	.133	.001	.113	.010
Open-Ended Appreciation	.141	.000	.108	.018
Anagram	.160	.000	.143	.000

4.3 Manipulation Checking

4.3.1 Learned Helplessness

As the solvable concept formation task was not used in this study, the effectiveness of learned helplessness manipulation cannot be measured. However, the consistency of learned helplessness induced between the two groups was examined using an independent-samples t-test. There was no significant difference in learned helplessness scores for Treatment (*M* = 49.76, *SD* = 5.870) and Control (*M* = 48.55, *SD* = 5.259) groups; *t*(163) = .615, *p* = .546. The result indicated that the two groups had similar learned helplessness levels as there was no difference in the Learned Helplessness Scale scores between the two groups.

4.3.2 Langerian Mindfulness

To ensure successful induction of Langerian mindfulness, an independent-samples t-test was conducted on the three subscales of PSMS. Firstly, no significant difference was found in Focused Attention $t(163) = 1.666$, $p = .098$. Similarly, there was no significant difference in the Novelty Appreciation of Treatment ($M = 12.57$, $SD = 3.053$) and Control ($M = 12.54$, $SD = 3.330$) groups; $t(163) = .6$, $p = .952$. Finally, there was a significant difference for Open-Ended Expectation $t(163) = 2.916$, $p = .004$. Open-Ended Expectation for Treatment group ($M = 13.30$, $SD = 2.408$) was significantly lower than the Control Group ($M = 14.43$, $SD = 2.548$). The effect (d) was 0.46, indicating a small effect.

4.4 Anagram Performance

A one-tailed independent-samples t-test was conducted to test the difference in Anagram scores between Treatment and Control groups. As shown in Table 3, there was a significant difference, $t(163) = 1.781$, $p = .0385$. Mean anagram score for Treatment group ($M = 14.82$, $SD = 4.103$) was higher than the Control group ($M = 13.50$, $SD = 5.327$). The effect (d) was .028, indicating a small effect. The results supported the conclusion that the Anagram score between the two groups was significantly different.

Table 3

Summary of Descriptive Statistics for All Variables

	Control Group (n = 82)				Treatment Group (n = 83)				
	M	*SD*	Skewness (*SE*)	Kurtosis (*SE*)	*M*	*SD*	Skewness (*SE*)	Kurtosis (*SE*)	Cohen's *d*
LHS	48.55	5.26	.274 (.266)	-.075 (.526)	49.76	5.87	-.311 (.264)	-.696 (.523)	0.22
FA	12.57	3.11	-.863 (.266)	1.060 (.526)	13.30	2.47	-.441 (.264)	.697 (.523)	0.26
NA	12.54	3.33	-.561 (.266)	.037 (.526)	12.57	3.05	-.364 (.264)	-.145 (.523)	0.01
OEE	14.43[b]	2.55	-.695 (.266)	.503 (.526)	13.30[b]	2.41	.012 (.264)	-.381 (.523)	0.46
Anagram	13.50[a]	5.33	-.927 (.266)	.114 (.526)	14.82[a]	4.10	-.607 (.264)	-.708 (.523)	0.28

Note. SD = Standard Deviation, *M* = Mean, *SE* = Standard Error, LHS = Learned Helplessness Scale, FA = Focused Attention, NA = Novelty Appreciation, OEE = Open-Ended Expectation

[a]Significant difference was found using one-tailed independent T-test.

[b]Significant difference was found using two-tailed independent T-test.

Chapter V

Discussion and Conclusion

5.0 Discussion

Aforementioned, the current study aimed to examine the effectiveness of Langerian mindfulness practice in reducing learned helplessness among undergraduates in Malaysia. There was no significant difference in the LHS between the Treatment and Control groups. While for PSMS, a significant difference was found in the OEE dimension. Notably, the current study observed that Langerian mindfulness has successfully reduced learned helplessness. Thus, the null hypothesis was rejected, and the alternative hypothesis was supported.

Firstly, the current study's findings showed no significant difference in the LHS between the two groups. Hence, it can be concluded that participants in both groups were in the same helpless condition before they continue with the Langerian mindfulness practice or BBC news.

Remarkably, the current study observed a significant difference between the Treatment and Control groups in the OEE dimension of PSMS in which the Control group participants had higher OEE than the participants in the Treatment group. This seemed to be contradictory with Langer (1997) as well as Langer and Moldoveanu (2000) that suggested mindful individuals to be more open or accepting towards uncertainty. However, the result is aligned with another study by Ritchie and Bryant (2012). The researchers mentioned that mindless people would be unaware of their surroundings; they will have fewer expectations about what will happen next in positive situations. In other words, mindless people are usually uncertain of what to expect and cannot predict how things will proceed. This is the reason why they believe that something could happen at any time.

Although the current study results accord with the claims by Ritchie and Bryant (2012), still, there are some alternative accounts of why mindless individuals scored higher in OEE than mindful individuals. Maymin and Langer (2021) mentioned that people who are mindful would be less prone to cognitive biases and less likely to use faulty heuristics. Thus, people who are more mindful are more rational and are more conscious of context and possibilities, making them less likely to use the incorrect heuristic. Additionally, OEE items did not distinguish between positive expectation and negative expectation (i.e., Right now, I am not sure what to expect).

Following this way, the results of the current study could be interpreted as mindless individuals who scored high in OEE were not only having positive expectations but also coupled with plenty of negative expectations, including cognitive biases and false heuristics. Similarly, Pagnini et al. (2016) highlighted that relying on past categories creates negative expectations for the present, limiting the perception of control. By assuming the amounts of negative expectations drawing from past experiences built up and then coupled together. It is suggested that the participants in the Control group had more open-ended negative expectations. They were in a mindless state during the experiment; they had plenty of negative and false expectations; susceptible to false heuristics; did not know what would happen next and were unsure how to respond rationally to the possible task. The negative expectations then raised the level of OEE among participants in the Control group.

Furthermore, the current study successfully demonstrated the effectiveness of Langerian mindfulness in reducing learned helplessness by comparing the performance of both groups on a subsequent task, anagram. The results showed a significant difference between the Treatment group and the Control group, with the Treatment group scored higher in the anagram task than the Control group. The findings are consistent with Maier and Seligman's original learned

helplessness model, which revealed that individuals who have previously experienced

uncontrollability developed an expectation of response-outcome independence. Therefore,

individuals tend to underestimate the relationship between their responses and the outcomes in

later tasks even they have control over it (Maier & Seligman, 1976). Nevertheless, Pagnini et al.

(2016) emphasized that learned helplessness is an intense form of mindlessness. In this case, the

past associations (failure in solving concept formation task) are mindlessly carried into the

present (the anagram task), even though the situation has changed. This elaboration further

explained the underlying mechanism for the low score in the anagram task among the Control

group participants. Learned helplessness disallows quick, subtle changes to present moment

experiences (Baltzell & Cote 2016).

On the other hand, the participants who had undergone Langerian mindfulness practice

did not bring their failure in the prior concept formation task to the anagram task (present). Thus,

the level of learned helplessness among the Treatment group participants has decreased as they

scored higher in the anagram task. This is in line with the past study, which mentioned that a

mindful individual could flexibly adapt to the present moment without relying on past

experiences that the situation is inescapable (Baltzell & McCarthy, 2016). Therefore, learned

helplessness does not occur when a person is in a mindful state (Langer, 1989; Pagnini et al.,

2016). Overall, the result of this study revealed that Langerian mindfulness helped the

participants suppress, inhibit, or eliminate maladaptive habits, heuristics, as well as automatic

thoughts, as known as mindlessness.

5.1 Theoretical Implications

This study's finding contributes an explicit understanding and explanation of the impact

on Langerian mindfulness in reducing learned helplessness by using the Informational Theory of

Learned Helplessness (Krofta, 1993). The Informational Theory of Learned Helplessness (Krofta, 1993) attempts to explain that people will be situated in cognitive exhaustion and lead to learned helplessness after the repeated failures on a specific task or facing uncontrollable events. People will rely on past experiences and form expectations on a specific task when they experienced multiple failures. Thus, cognitive exhaustion will be formed. People will be unable to remove the state of cognitive exhaustion and this will eventually lead to learned helplessness without changing an environment.

On the contrary, practicing Langerian mindfulness can reduce individuals' learned helplessness and prevent them from relying on past experiences by actively seeking and drawing the distinction around the environment. Langerian mindfulness refers to the process of accepting uncertainty and integrates oneself with the new situation as the environment is constantly changing (Khoury et al., 2017). It can help people break through the expectation of failing on a specific task by noticing that the situation is constantly changing. In the current study, the participants were asked to notice three new details in their environment to let them notice that the situation is constantly changing. The Treatment group's participants (mindfulness) had answered more anagrams than the Control group (mindlessness). The results illustrated that Langerian mindfulness can effectively reduce learned helplessness by noticing the new changes in the present moment without needing to escape from the current situation.

5.2 Practical Implications

Past studies repeatedly suggested that Langerian mindfulness can reduce learned helplessness (Langer, 1989; Pagnini et al., 2016), but no experimental study has been studied to validate this relationship. Also, past studies were unable to identify an effective way to alleviate learned helplessness. This online experimental study provides sufficient insights on the empirical

evidence in the experimental manipulation of Langerian mindfulness to fill the literature gap in the related research area. A reference for future research study regarding Langerian mindfulness and learned helplessness has been formulated in this study.

On the other hand, this study had successfully proposed and demonstrated an effective yet easy-to-practice method to reduce learned helplessness. The current study indicated that the participants could practice Langerian mindfulness in a simple way by actively noticing the new distinction in the context to keep themselves in the present moment and reduce learned helplessness. Moreover, students will increase social-emotional learning and achieve a better quality of life by practicing Langerian mindfulness (Pagnini et al., 2018). Besides, relevant authorities or policymakers can utilize Langerian mindfulness as the intervention of learned helplessness in the education system as most students were found to have different levels of learned helplessness. For instance, the practitioners can teach Langerian mindfulness twice a week in class to alleviate the learned helplessness. It would be beneficial to the development of each student's psychological and academic well-being and at the same time extending the work of Ellen Langer.

5.3 Limitations

Several limitations are identified in the current study. First, the undercoverage bias was found in this study as the demographic results showed an unequal number of participants in terms of gender and ethnicity group. It might result in underrepresented subgroups, leading to an inability to generalize the results to the whole population (Bornstein et al., 2013). However, the current study had some difficulties in recruiting participants as this study was conducted through an online survey method due to the COVID-19 pandemic. Thus, convenience and snowball sampling methods were utilized to recruit participants. Besides, the target participants in the

current study were the undergraduates' population in Malaysia. Although the results had

primarily reflected undergraduates' population in Malaysia, it limits the current findings'

generalizability to diverse populations, contexts, or settings.

Next, the available instruments in current literature are inadequate in measuring the state

Langerian mindfulness based on the present moment or task. For instance, Langerian

Mindfulness Scale (LMS) focuses on trait Langerian mindfulness of an individual (Pirson et al.,

2012). In addition, the Current Experiences Inventory (CEI) is designed to access state Langerian

mindfulness and it measures the four factors — novelty seeking, novelty producing, engagement,

and flexibility, which matches with the construct of Langerian mindfulness (Krech, 2006).

However, CEI focuses more on the overall state Langerian mindfulness in a day instead of

accessing the state Langerian mindfulness based on a specific task. Therefore, the Positive State

Mindfulness Scale (PSMS) has been chosen to measure the state Langerian mindfulness in a

specific task. It was developed based on the prototype of LMS, and it intends to measure the

state Langerian mindfulness. Although the subscales of PSMS did not perfectly measure the four

primary components of Langerian mindfulness, it is the most suitable scale for this study in

measuring state Langerian mindfulness based on those available instruments.

Moreover, the effectiveness of learned helplessness manipulation was not clearly

demonstrated in this study. The pilot study that compared LHS scores between participants that

received solvable and unsolvable concept formation tasks only yielded a mixed result. Also, the

actual study did not include a solvable concept formation task as it would require more

participants.

Lastly, the limitation of using anagram as a dependent variable is that anagram scores

depend on the participants' English proficiency. If participants were not familiar with a word in

the anagram question, they would not be able to answer it regardless of whether they were feeling helpless. For example, one of the anagrams is 'UNATJ', the answer is 'JAUNT' by following the sequence of 5-3-1-2-4. If some of the participants were not familiar with the word 'JAUNT', they would not be able to answer the anagram. Consequently, this may also explain the small effect size found in the present study.

5.4 Recommendations for future study

Firstly, future researchers can implement a stratified sampling method to avoid the undercoverage bias. The stratified sampling obtains the sample by dividing the population into strata (sub-groups) according to various homogeneous features such as age, gender, ethnicity. Then, the researchers will randomly select the participants from each stratum (Acharya et al., 2013). With that, the study could avoid underrepresenting some subgroups and reach an average number of participants in different sub-groups. Besides, future studies could replicate the current research in different settings or with different populations to examine whether Langerian mindfulness is applicable in reducing learned helplessness in other contexts such as medical, sport, and workplace settings.

Future studies can also consider developing a state Langerian Mindfulness scale that could perfectly measure the four primary components of Langerian mindfulness, including novelty seeking, novelty producing, engagement, and flexibility. This action can help measure the state Langerian mindfulness more accurately and facilitate the development of the related research field.

Thirdly, it is recommended for future studies that utilize the concept formation task to implement a control group that receives the solvable version of the task. This can ensure the effectiveness of learned helplessness manipulation.

Lastly, the current study suggests future studies to develop an alternative online method or task that will not be affected by linguistic ability instead of using an anagram task to measure the impact of learned helplessness induced in the concept formation task. In this case, every participant will have equal ability in answering the tasks.

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Appendix A

G*Power Analysis
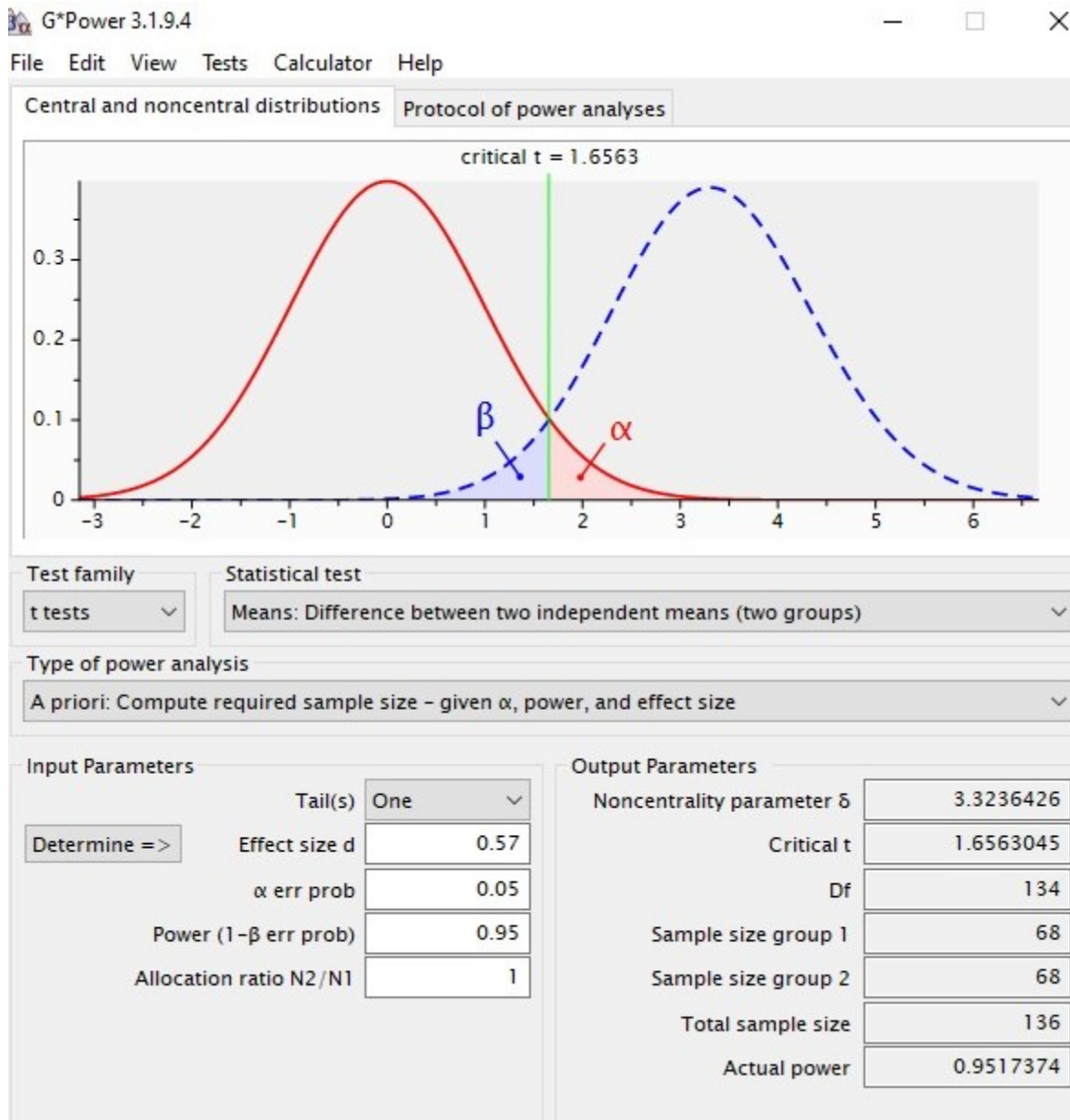
Appendix B

Ethical Approval Letter for Research Project (First Page)

UNIVERSITI TUNKU ABDUL RAHMAN
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Re: U/SERC/189/2020

18 November 2020

Dr Chie Qiu Ting
Head, Department of Psychology and Counselling
Faculty of Arts and Social Science
Universiti Tunku Abdul Rahman
Jalan Universiti, Bandar Baru Barat
31900 Kampar, Perak.

Dear Dr Chie,

Ethical Approval For Research Project/Protocol

We refer to the application for ethical approval for your students' research projects from Bachelor of Social Science (Hons) Psychology programme enrolled in course UAPZ3013. We are pleased to inform you that the application has been approved under <u>expedited review</u>.

The details of the research projects are as follows:

No	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	Online Dating, Loneliness and Alcohol Use Leading to Risky Sexual Behavior	1. Celine Anne 2. Maung 3. Lee Chun Leong	Dr Nurul Iman Binti Abdul Jalil	18 November 2020 - 17 November 2021
2.	Langerian Mindfulness on Learned Helplessness Among Undergraduates in Malaysia	1. Ang Ching Ting 2. Wong Wen Pin 3. Yong Xin Yi	Dr Tan Chee Seng	

The conduct of this research is subject to the following:

(1) The participants' informed consent be obtained prior to the commencement of the research;

(2) Confidentiality of participants' personal data must be maintained; and

(3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 **Fax**: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 **Fax**: (603) 9019 8868
Website: www.utar.edu.my

Appendix B

Ethical Approval Letter for Research Project (Last Page)

Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,

Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

c.c   Dean, Faculty of Arts and Social Science
         Director, Institute of Postgraduate Studies and Research

Appendix C

Online Experimental Registration Form (First Page)

FYP Online Experiment Registration

We are Year 3 Trimester 3 undergraduates from Bachelor of Social Science (Hons) Psychology at UTAR Kampar campus. We are working on a research project titled "The Effects of Emotional Well-Being on Logical Reasoning and Linguistic Ability among Undergraduates in Malaysia".

This is an online experimental study and it will be conducted through the Skype/Microsoft Team platform. Kindly fill in your personal information and choose a time slot to join our study!

* Required

Requirements for the online experimental study

1. The study will last around 30 minutes to 1 hour. Kindly reserve your time for this study.
2. Use a computer device to complete the study.
3. Turn on your speaker or wear a headset/ earphone during the study.
4. Complete the study in a quiet place with minimum interference.

1. By choosing "I agree" button below, it signifies that "I have agreed to the information given above. *

   Mark only one oval.

   ◯ I agree

   ◯ I disagree

   Skip to question 2

   Registration Form

2. Full Name (as per I/C) *

   _____

3. Age *

   _____

Appendix C

Online Experimental Registration Form (Second Page)

4. Phone number *

_____

5. Email *

_____

6. Nationality *

Mark only one oval.

( ) I am a Malaysian

( ) I am NOT a Malaysian

7. Are you a FULL-TIME undergraduate who is currently studying in Malaysia? *

Mark only one oval.

( ) Yes

( ) No

8. Have you done our pilot study before? *

Pilot study title: An application of a knowledge-based system to Psychology among undergraduates in Malaysia

Mark only one oval.

( ) Yes

( ) No

Please CHOOSE ONE available time slot to join our experiment! Thanks

ATTENTION: CHOOSE ONE SLOT ONLY

Appendix C

Online Experimental Registration Form (Third Page)

9. Available time slots (Week 3)
    Choose ONE slot only

    Mark only one oval.

    ◯ Monday 1/2/2021 9:00am - 10:30am

    ◯ Tuesday 2/2/2021 2:00pm - 3:30pm

    ◯ Wednesday 3/2/2021 3:00pm - 4:30pm

    ◯ Thursday 4/2/2021 11:00am - 12:30pm

    ◯ Friday 5/2/2021 2:00 pm - 3:30pm

    ◯ Saturday 6/2/2021 10:00am - 11:30am

    ◯ Saturday 6/2/2021 2:00pm - 3:30pm

10. Available time slots (Week 4)
    Choose ONE slot only

    Mark only one oval.

    ◯ Monday 8/2/2021 9:00am - 10:30am

    ◯ Tuesday 9/2/2021 2:00pm - 3:30pm

    ◯ Wednesday 10/2/2021 3:00pm - 4:30pm

Appendix C

Online Experimental Registration Form (Last Page)

11.   Available time slots (Week 5)
      Choose ONE slot only

      Mark only one oval.

      ◯   Monday 15/2/2021 9:00am - 10:30am

      ◯   Tuesday 16/2/2021 2:00pm - 3:30pm

      ◯   Wednesday 17/2/2021 3:00pm - 4:30pm

      ◯   Thursday 18/2/2021 11:00am - 12:30pm

      ◯   Friday 19/2/2021 11:30am - 1:00pm

      ◯   Friday 19/2/2021 2:00pm - 3:30pm

      ◯   Saturday 20/2/2021 10:00am - 11:30am

      ◯   Saturday 20/2/2021 2:00pm - 3:30pm

      ◯   Sunday 21/2/2021 11:00am - 12:30pm

12.   Available time slots (Week 6)
      Choose ONE slot only

      Mark only one oval.

      ◯   Wednesday 24/2/2021 3:00pm - 4:30pm

This content is neither created nor endorsed by Google.

Google Forms

Appendix D

Online Experimental Research Poster

Good day 🌻 We are final year psychology undergraduates from UTAR, currently conducting our Final Year Project (FYP) entitled "The Effects of Emotional Well-Being on Logical Reasoning and Linguistic Ability among Undergraduates in Malaysia" 😎

Just give us 30-40 minutes of your time and stand a chance to win a RM10 Grab food gift card 🥳 Kindly refer the poster below and get know more about the information of this study 😉

🏷️ Grab this opportunity to join us by scanning the QR code below or click https://forms.gle/w7NMXNJjt3mDA4eaA to register yourself!

We sincerely appreciate your effort and contribution to our study. Many thanks!!!

Appendix E

Confirmation Message of Online Experimental Study

Hello 🌈 I'm XXX, a final year psychology undergraduate in UTAR.

Thank you for filling up our FYP online experiment registration form 😊 Below listed the time you choose for the study:
Date: 10/2/2021, Wednesday (Tomorrow)
Time: 3pm - 4:30pm

📌 Below listed some reminder for this study:
1)Kindly reserve your 1-hour time for this study as this study will last for a minimum of 30 minutes.
2)Find a quiet place with minimum interference to complete the study.
3) Use a computer device to complete the study.
4) Turn on your speaker or wear earphone during the study.

Since this is an online experimental study, we will conduct the study through online platform, Skype. Skype is an online application that provided free video/group call. You can join the meeting as a guest without download the application and the guest account will be last for 24 hours only.

📮 Here is the link for you to join the Skype ➡️https://join.skype.com/W5gAAYkZXLYg

⏰ Please be punctual and try your best to join the meeting 15 minutes earlier before the meeting start. Kindly refer the image attached below to know more details about how to sign in Skype as a guest. Thank You 😉
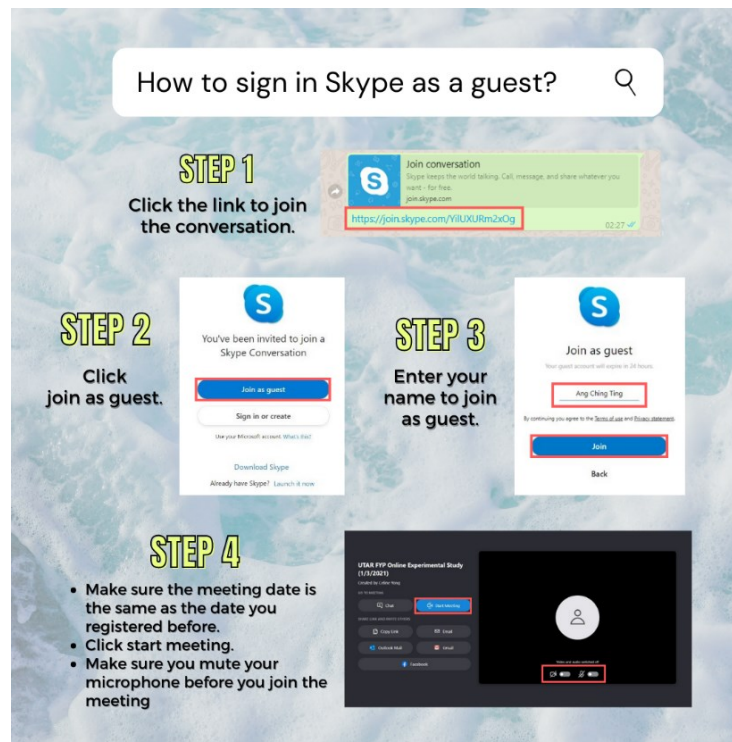
Appendix F

Pre-Experiment Briefing

Pre-Experiment Briefing in Video Form:

https://drive.google.com/file/d/1_puJ4_RfZ3wLQzfqmEns-_ihYDKXWH5H/view?usp=sharing
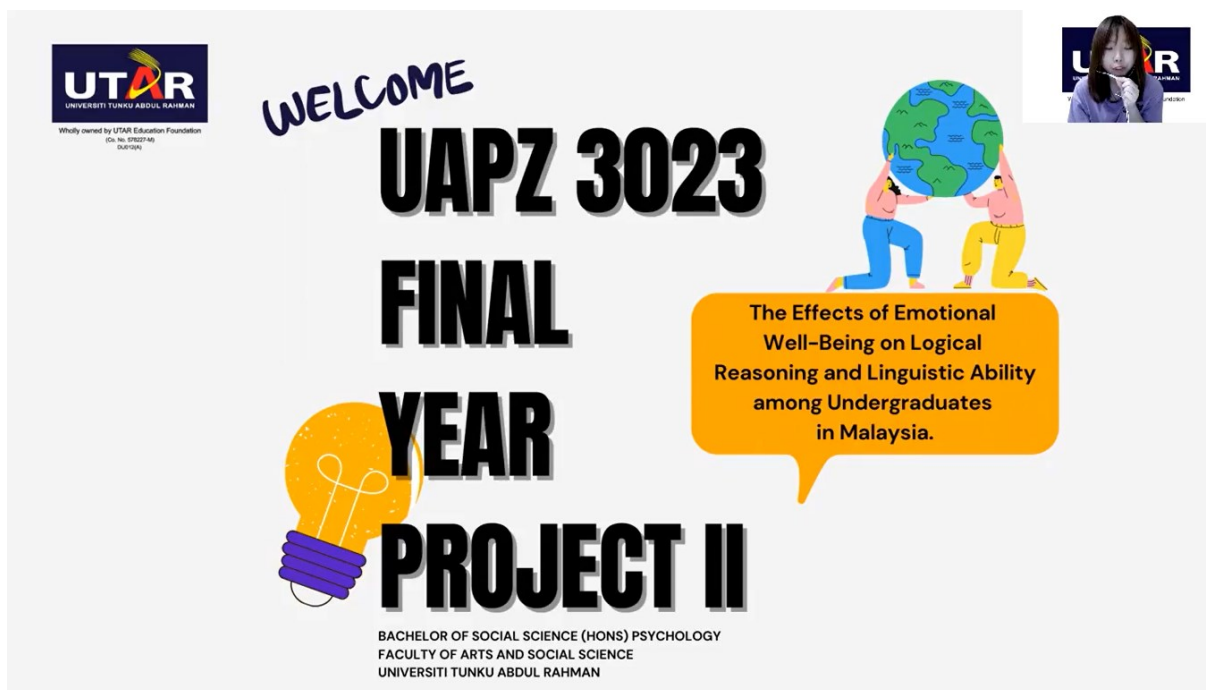
Appendix G

Consent Form

Purpose of the Study
We are Year 3 Trimester 2 undergraduates from Bachelor of Social Science (Hons) Psychology at UTAR Kampar campus. The course that we are currently taking is UAPZ 3013 Final Year Project I. We are working on a research project titled **"The effects of emotional well-being on logical reasoning and linguistic ability among Undergraduates in Malaysia"**.

Procedures
In this research project, you will be asked to play a series of games that will assess your Emotional Well-Being and you will be asked to provide feedback on the overall gaming experience by answering a set of questionnaires.

Confidentiality
Your name and your personal details will be collected for the research purpose and it is not in an anonymous manner. However, your information and responses will be handled in a private manner. The results will be reported as group data, and only be used for academic purposes which only the researchers and supervisor have access to it.

Participation
Participation in this study is voluntary in nature. You have the right to withdraw from this research at any time with no penalty.

Risk and discomfort
During the process of research, we anticipate that the risk or discomfort that you experience will not be greater than what you will normally experience throughout your daily life.

Payment and Compensation
The 50 lucky participants will be selected through a lucky draw and obtain the RM 10 grab food gift card for voluntary participation.

Contact information
If you have any further questions or concerns about this study, please feel free to contact our group leader, Yong Xin Yi (celineyxy0903@1utar.my).

Thank you in advance.

Agreement to Participate

By choosing "I agree" button at below, it signifies that "I have agreed to the information given. I also understand that I have the right to withdraw from this study without any form of penalty. I am aware that there will be a certain risk involved in this study. The information that I have provided will also be kept confidential."

〇 I agree.

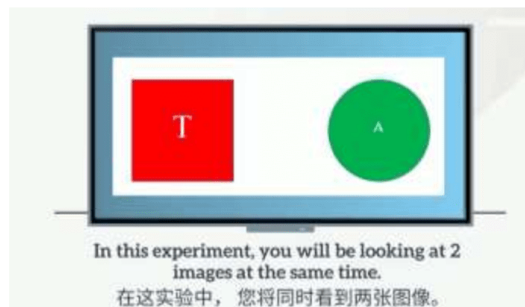〇 I do not agree.

Appendix H

Concept Formation Task

Wholly owned by UTAR Education Foundation
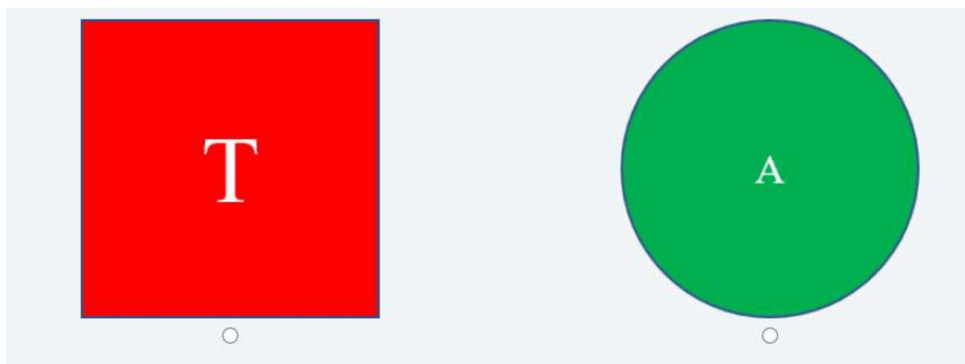(Co. No. 578227-M)
DU012(A)

Briefing Session

Before the experiment gets started, please view the video below to understand the instruction of this experiment. You can go through the video as many times as you like. Once you're done, you can click the next button which is located at the bottom right corner to proceed to the next section.

In this experiment, you will be looking at 2 images at the same time.
在这实验中，您将同时看到两张图像。

Question 1
1. Choose the image with the correct value.

Appendix H

Concept Formation Task

Please choose the correct value for **Question 1**

○ Colour: Red

○ Colour: Green

○ Shape: Square

○ Shape: Circle

○ Font Size: Big

○ Font Size: Small
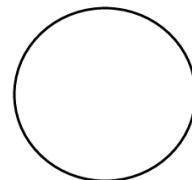
○ Letter: A

○ Letter: T

Appendix I

Learned Helplessness Scale (LHS)

UTAR
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DU012(A)

Below are a number of statements that refers to the feelings towards the previous task. Please read the following statements carefully and choose the category which most closely describe your current feelings towards on the previous task. Thank you.

	Statement	Category			
		Strongly Agree	Agree	Disagree	Strongly Disagree
1	No matter how much energy I put into a task, I feel I have no control over the outcome.				
2	I feel that my ability to solve problems is the cause of my success.				
3	I can find solutions to difficult problems.				
4	I don't place myself in situations in which I cannot predict the outcome.				
5	If I complete a task successfully, it is probably because of my ability.				
6	I have the ability to solve most of life's problems.				
7	When I do not succeed at a task, I do not attempt any similar tasks because I feel that I would fail them also.				
8	When something doesn't turn out the way I planned, I know it is because I didn't have the ability to start with.				
9	Other people have more control over their success and/or failure than I do.				
10	I try new tasks if I have failed similar ones in the past.				

Appendix I

Learned Helplessness Scale (LHS)

11	When I perform poorly, it is because I don't have the ability to perform better.				
12	I accept tasks even if I am not sure that I will success at them.				
13	I feel that I have little control over the outcomes of my work.				
14	I am successful at most tasks I try.				
15	I feel that anyone else could be better than me at most tasks.				
16	I am able to reach my goals in life.				
17	When I don't succeed at a task, I find myself blaming my own stupidity for my failure.				
18	No matter how hard I try, things never seem to work out the way I want them to.				
19	I feel that my success reflects my ability, not chance.				
20	My behavior seems to influence the success of a work group.				
21	In this line, we ask you to mark the right option "Strongly Agree" on the answer scale to show that you have read this sentence.				

*Attention Checker: Item 21

Appendix J

Langerian Mindfulness Practice

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DU012(A)

Mindfulness

▶ 0:00 / 3:14 ——————— 🔊 ⋮
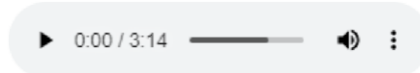
Your task here is to challenge yourself to look for new details in the things that you know very well. Please write down these details in the space provided below. The three steps below will guide you through the exercise.

1. Notice 3 new details about your body. Look at your left and right thumb, notice the differences between the two fingers. Notice your current posture and be aware of how your posture might be different a while ago. Notice your current outfit and realize how it is different yesterday or a while ago.

2. Notice 3 new details about an object. Pick an object that you know well, it can be anything (e.g. your smartphone). Notice the colour, texture and shape of your object, and how the object is different from when it is new. Observe the differences between the object you picked and other similar objects.

3. Notice 3 new details about your environment. Walk around and find new details of the things you thought you knew. Observe the objects around your environment and the way they are placed or arranged. Notice the differences between the way your environment is now compared to few days ago.

You can read through the instruction as many times as you like. Click next once you have noticed the 9 new details.

You are given two minutes for this section. Close your eyes and take three deep, long breaths. Next, recall the 9 new details that you noticed previously and keep them in mind.

Appendix K

BBC Newspaper Article

UTAR
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(Co. No. 578227-M)
DU012(A)

Diesel vehicles important for UK economy, says industry

▶ 0:00 / 3:16   ◀))   ⋮

The motor industry's fight-back against growing opposition to diesel has moved up a gear with a strong defence of commercial vehicles.

The industry's trade body has warned people not to ignore the "essential role" diesel commercial vehicles play in keeping the UK economy moving. The Society of Motor Manufacturers and Traders also pointed out that emergency vehicles are overwhelmingly diesel.

But "green" groups said it was clear all diesel engines must be phased out. Diesel vehicles have been under attack since revelations that carmakers falsified emissions data. It has prompted calls for vehicle bans, tax penalties, and scrappage schemes.

The SMMT's defence of the commercial vehicle sector comes at the start of a three-day event that will promote new and cleaner diesel technology. In a report published to mark the start of the Commercial Vehicle Show, in Birmingham, the SMMT claimed that there are 1.8 million owner-operators dependent on vans for their livelihood.

The report also estimated that UK commercial vehicles contribute £27.5bn to the economy by moving freight alone. The SMMT said that, on average, modern diesel vans use around 50% less fuel than petrols, which means lower fuel bills for operators and a knock-on benefit for consumers and taxpayers.

Mike Hawes, the SMMT's chief executive, said, "Commercial vehicles play an essential but often overlooked role in keeping Britain functioning, performing jobs and transporting vital goods and services that we all rely on every day. "This sector has never been so important to the UK economy - and to British jobs - and diesel's role in powering these vital vehicles should not be downplayed. Nearly all our commercial vehicles are driven by diesel."

But the latest Euro VI standards meant that new diesel vehicles were the cleanest and safest yet, he said. Mr. Hawes also pointed out that diesel was essential for keeping tens of thousands of ambulances, fire engines and police vans on the road. But his defence of the sector got short shrift from environmental groups, which said it was time to get rid of all internal combustion engines for the benefit of health and quality of life.

Jenny Bates, air pollution campaigner at Friends of the Earth, said: "The motor industry knows that the writing is on the wall. "Technology is moving so fast that using alternative power for vans should not be a problem," she said, citing efforts made by the bus industry to become cleaner. "Obviously, we need to ensure emergency services are maintained. But in the end, all vehicle types need to be addressed, even if it doesn't all happen at the same time. It just needs commitment and investment."

You can read through this article as many times as you like, click next once you are done.

You are given two minutes for this section. Write a brief summary of what you understand from the newspaper article.

Appendix L

Positive State Mindfulness Scale (PSMS)

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DU012(A)

Below are a number of statements that refers to the feelings towards the previous task. Please read the following statements carefully and place a mark on the category which most closely describe your current feelings based on the previous task. Thank you.

Items	Category					
	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1 My attention is focused on what is happening right now.						
2 My attention is absorbed in the moment.						
3 I am aware of nothing else except what I am going through right now.						
4 I enjoy the newness of this moment.						
5 At the moment I take great pleasure in experiencing new things.						
6 Right now everything happening seems unique to me.						
7 Right now I am not sure what to expect.						
8 Right now I cannot tell how things are going to unfold.						
9 I feel like anything could happen from one moment to the next.						
10. In this line, we ask you to mark the right option "Strongly Agree" on the answer scale to show that you have read this sentence.						

*Attention Checker: Item 10

Appendix M

Anagram-Solution Task

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You are now going to solve some anagrams. As you know, anagrams are words with the letters scrambled.

For example:
Question: TAREH
Answer: EARTH

On this task, you will be given some anagrams and asked to unscramble the letters so that they form a word. Please unscramble the words, and fill in the blank as soon as you know what the word is. **There could be a pattern by which to solve the anagrams**, but that's up to you to figure out. You may work on each word as long or as little as you like until the given time limit.

If you wish to **submit** your answer, you may click the **"submit"** button at any time.
If you wish to **give up**, you may leave the answer blank and click the **"submit"** button at any time.

Answer the anagrams in **CAPITAL LETTER**

If you are ready. Click the submit button to proceed to the anagram questions.

As you are working through these anagrams, try to notice some new details or differences between this task and the previous task (the one where you have to guess the correct image).

For example, there can be differences in the way the questions are presented, the way you answer these questions, or your performance.

Question 1:

GAURS

Appendix N

Demographic Information (First Page)

Wholly owned by UTAR Education Foundation
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DU012(A)

Full Name (as per I/C):

E-mail address:

Phone number:

Age:

Gender:

○ Male

○ Female

Ethnicity:

○ Malay

○ Chinese

○ Indian

○ Others:

Appendix N

Demographic Information (Last Page)

Religion:

○   Islam

○ Buddhism

○ Hinduism

○ Christianity

○ Others [＿＿＿＿＿＿＿＿＿]

Highest Education Level

○ PT3

○ SPM

○ STPM/ A-Level

○ Foundation

○   Diploma

○ Undergraduate

○ Postgraduate

○ Others: [＿＿＿＿＿＿＿＿＿]

Institution of Higher Education (e.g. UTAR)

[＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿]

Course of Study (e.g. Psychology, Food Science etc.)

[＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿]

Appendix O

Debriefing

Debriefing session
Dear participant, thank you very much for participating in our study. We, Yong Xin Yi, Wong Wen Pin, and Ang Ching Ting from Bachelor of Social Science (Hons) Psychology, have gotten useful information on Langerian Mindfulness and Learned Helplessness.

Purpose of Our Study
Our actual study topic is **the effectiveness of Langerian Mindfulness on Learned Helplessness among undergraduates in Malaysia**. The main purpose of our study is to see whether Langerian Mindfulness can reduce the effect of Learned Helplessness.

You have been told that there is a way for you to find out the correct answer in the first task; in reality, however, you were given an unsolvable version of the concept formation task. This means that **there is no correct answer for the 4 questions that you went through just now**. This is done **to induce a state of Learned Helplessness** -- a feeling that one has no control over their environment.

There are 2 groups in this study, namely:
(1) Langerian mindfulness on learned helplessness experiment group
(2) Learned helplessness control group

Appendix O

Debriefing (Video)

Participants will receive a message with debriefing video after they completed the study through

WhatsApp:

Thank you for participating in our study.
Your response is well received 📫

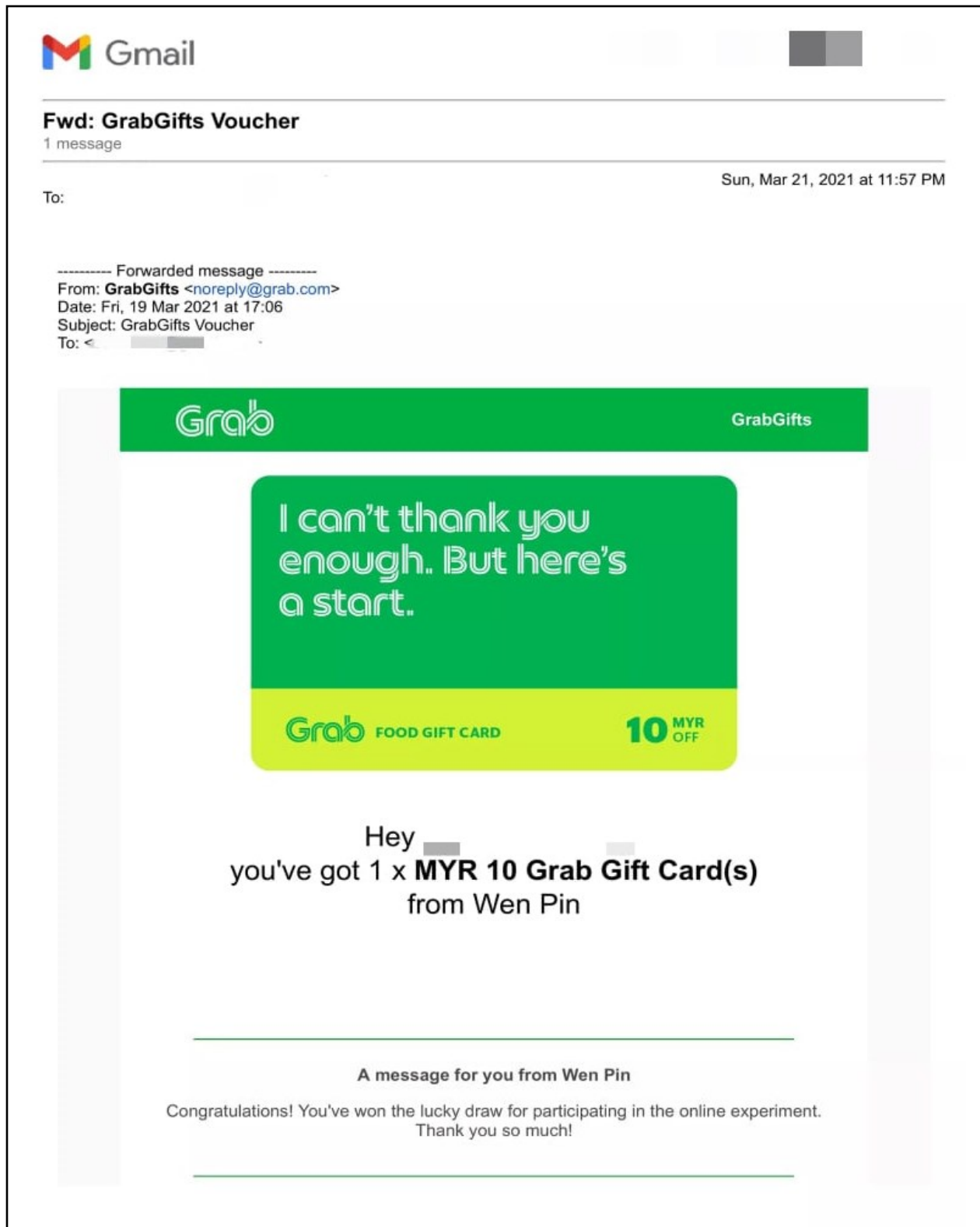We sincerely appreciate your effort and contribution to our study 🌍

Below attached the link for our debriefing video. If you have any inquiries or confusion for our study, feel free to visit the video🤗

https://drive.google.com/file/d/1ULR_G11V4TQuZUDTkMmj1Aukalbjgl3B/view?usp=sharing
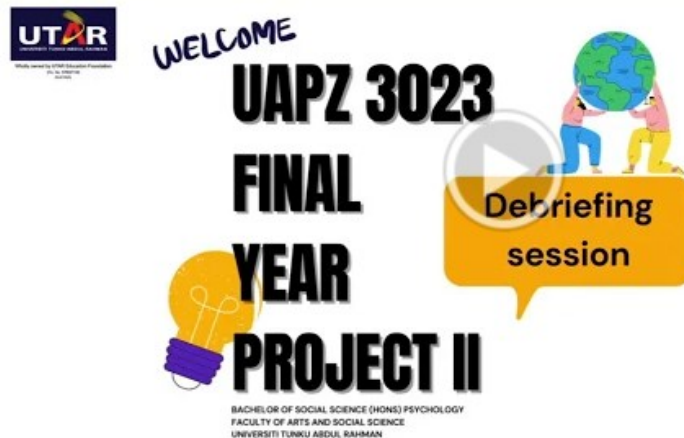
Appendix P

Token of Appreciation

Appendix Q

Congratulation and Appreciation Message

<u>Congratulations Message for Winners</u>

Dear participant:

I am Ching Ting, the researcher from the experimental study "Langerian Mindfulness on Learned Helplessness among Undergraduates in Malaysia". Congratulations! You have won the RM10 Grab Food Gift Card and we have already sent the gift card to your email. If you wish, you can watch the lucky draw results with the link below👇
https://drive.google.com/file/d/18YjvY7fVLqWvWokKKuLpC_bzHGpHIOAj/view?usp=sharing

On behalf of our FYP team, I want to thank you for your kindness 💗 We can only reach our target sample size by having participants like your good selves.

Stay safe, may you and your family be well and peaceful.

_____

<u>Appreciation Message to Participants Who Are Not Being Selected</u>

Dear participant:

I am Ching Ting, the researcher from the experimental study "Langerian Mindfulness on Learned Helplessness among Undergraduates in Malaysia". I am very sorry to inform that you are not being selected as the lucky draw winner due to some reasons below:

1. Failed to answer our attention checkers
2. Did not rename your screenshot
3. Did not submit your screenshot to googledrive
4. Not being chosen in the lucky draw session

If you wish, you can watch the lucky draw results with the link below👇
https://drive.google.com/file/d/18YjvY7fVLqWvWokKKuLpC_bzHGpHIOAj/view?usp=sharing

Although you have not being selected, you had contributed a lot in our study. On behalf of our FYP team, I want to thank you for your kindness 💗 We can only reach our target sample size by having participants like your good selves. We truly appreciate your efforts. All the best to you💗💗💗💗

Stay safe, may you and your family be well and peaceful.

Appendix R

Langerian Mindfulness Instruction

As you are working through these anagrams, try to notice some new details or differences between this task and the previous task (the one where you have to guess the correct image).

For example, there can be differences in the way the questions are presented, the way you answer these questions, or your performance.

Powered by Qualtrics

Appendix S

Originality Report for Final Year Project

Langerian Mindfulness on Learned Helplessness among Undergraduates in Malaysia

by Xin Yi Yong

Abstract

Learned helplessness is an emerging issue in higher education with adverse psychological and academic consequences such as absenteeism, course withdrawal, depression, academic procrastination, and psychoactive drug abuse. Researchers have suggested Langerian Mindfulness as a new and practical alternative to reduce learned helplessness. However, the causal effect of Langerian Mindfulness remains open to date. Hence, an online experiment using a between-subject design was conducted in the present study to examine the effectiveness of Langerian mindfulness in reducing learned helplessness among undergraduates in Malaysia. A total of 165 Malaysian full-time undergraduates were recruited and randomly assigned to either the Langerian mindfulness group or the control group. Participants first completed the unsolvable concept formation tasks and answered the Learned Helplessness Scale. Next, the treatment group underwent a Langerian mindfulness practice while the control group summarized a BBC newspaper article. Finally, all participants answered the Positive State Mindfulness Scale and twenty anagrams. The independent-samples t-test results indicated that the Treatment group scored significantly higher in anagrams (i.e., low learned helplessness) than the Control group. The findings not only provide empirical support to the beneficial effect of Langerian mindfulness on decreasing learned helplessness but also demonstrate the usability of Langerian mindfulness in the Malaysian context. Local educators and practitioners are encouraged to employ Langerian mindfulness practice to help students to alleviate their learned helplessness.

Keywords: Learned helplessness, Langerian Mindfulness, Depression, Undergraduates

Chapter III

Methodology

3.0 Research Design

An online experimental research was conducted through the between-subjects design in this quantitative study due to the COVID-19 pandemic. The between-subjects design is an experimental research that randomly assigns each participant to only one experiment condition, such as a treatment group and a control group (Charness, 2012). In this study, the between-subjects design is used to measure whether there are any differences between the condition group, including the participants under the process of Langerian mindfulness (Treatment group) and the participants under the process of reading the BBC newspaper article (Control group). Besides, the convenience and snowball sampling methods were employed as the method of data collection. Furthermore, the deception concept was used in this experimental study to prevent the participants from being aware of the actual hypothesis being studied, which may affect the accuracy of the results. Lastly, a debriefing section was conducted to reveal the real hypothesis of the current study to participants at the end of the experiment. Before conducting the online experimental research, a pilot study was first conducted to ensure the effectiveness of manipulation, determine the sample size, ensure the feasibility of the study, and enhance the research design. The online applications Skype and Microsoft Teams were used to conduct the online experimental study, while the online software, Qualtrics was used in data collection.

3.1 Sample Size

The sample size of the current study was calculated by using G*Power Version 3.1. Besides, the effect size of the current study d=0.57, one-tail, statistical power level of 0.95, and

error probability level of 0.05 was obtained by calculating the descriptive statistics of the anagram task from the pilot study. Based on the G*Power sample size calculator, the sample size for the current study is 136 for two groups (see Appendix R).

In the current study, a total of 206 responses were collected. Firstly, 24 responses were removed due to partial completion. Next, one response from a participant who failed to understand the instructions of anagram was removed. Subsequently, nine more responses were removed as they do not meet the attention checking requirement. Also, four responses from non-Malaysians (international students) were excluded from the data analysis. Finally, three outliers in the LHS score were identified through boxplot. The outliers were removed as it reduced the consistency of Learned Helplessness between the two groups. After data cleaning, the retained sample size was (n=165), where the Langerian mindfulness group and Control group had (n=83 and n=82) respectively.

3.2 Data Collection Procedures

3.2.1 Inclusion and Exclusion Criteria

According to Garg (2016), the inclusion criteria are to identify the study population consistently, reliable, uniform, and objective, while the exclusion criteria include factors or characteristics that make the recruited population ineligible for the study. Hence, the inclusion criteria for the current study are (1) 18 years old to 25 years old, (2) full-time undergraduate, (3) Malaysian, (4) has not done our pilot study before, (5) has given consent to participate in the study and (6) answer correctly for all attention-checking items. In contrast, the exclusion criteria would be (1) below 18 years old or over 25 years old, (2) not a full-time undergraduate (3) not a Malaysian (4) has done our pilot study before (5) refused to give consent to participate in the study and (6) answer wrongly for one or more of the attention-checking items. For criteria (4),

the current study obtained the participant's name at the demographic session; this was to cross-check with the pilot study name list. Therefore, those who did not provide their full name were excluded from the current study.

3.2.2 Procedures of Obtaining Consent

An informed consent form was attached at the beginning of the online self-report questionnaires to ensure all recruited participants took part voluntarily and the privacy, potential risks of the participants, was stated clearly. There were also "I agree" and "I do not agree" buttons below the consent form as a signification of participants' consent. Also, all participants were informed about the actual topic at the end of the session with an explanatory infographic poster. Nevertheless, a debriefing video was sent to the participants via WhatsApp upon their completion of the experiment. The researchers had also answered all confusion, doubts, and inquiries from participants. The last two steps were intended to ensure that all participants understand the actual purpose of the online experiment and minimize the negative effects of learned helplessness and deception.

3.2.3 Description of Data Collection Procedures

Firstly, the data collection process began with determining the target population, namely undergraduates in Malaysia. Next, the time frame for data collection was set, which is four weeks (from 1/02/2021 to 24/02/2021). Nevertheless, the current study implied convenience and snowball sampling method; the recruitment message was then disseminated through social media platforms such as WeChat, Instagram, Facebook, WhatsApp, and Microsoft Teams. The participants registered themselves in the google form and chose an available slot in the Google form. Next, to ensure every participant understands the rules of the experiment, a pre-experiment briefing was conducted for all the participants. The online

experiments were conducted via two video conferencing software, Skype and Microsoft Teams. Following the experiment procedure, a Qualtric link was given to the participants to start with the experiment. Lastly, the data collection process was continued by analyzing the raw data and discussing as well as implementing the current study findings.

3.2.4 Dates/Duration of Recruitment Repeated Measures or Follow-Up

The follow-up was conducted on the same day after the experiment. A debriefing video and a short message regarding the real intention of the experiment were sent to every participant through WhatsApp.

3.2.5 Agreement and Payment

The current study has chosen 50 lucky participants and gave them a RM 10 grab food gift card for their voluntary participation. The selection criteria were participants who had completed the study within one hour and submitted a screenshot picture with their full name in google drive. After the data screening process, the total number of eligible participants for the lucky draw session was (n=100). The current study used an online lucky draw method named Random Name Picker to choose the 50 lucky participants. After the lucky draw session, all the participants were informed about the lucky draw result. Next, the RM10 grab food gift cards were purchased and then sent to the 50 lucky winners through e-mail. Lastly, a congratulations message was sent to the lucky winners, while the rest received an appreciation message.

3.3 Instrument/ Questionnaire

3.3.1 Manipulation of Learned Helplessness

Learned helplessness was induced by using a computerized version of the standard concept formation task (Hiroto & Seligman, 1975; Levine, 1971). In this task, participants were shown a series of two different stimulus patterns. Each pattern consisted of four dimensions, and

each dimension consisted of two different values: (a) shapes (square or circle), (b) colour (red or green), (c) letter ("A" or "T"), and (d) font size (large or small). Participants were instructed that one of the patterns was pre-determined by the researchers to be "correct" based on one of its values (e.g. red), and they will receive a "correct" feedback if they choose the pattern that contains that value. Hence, the participant's task was to choose one of the two patterns that they think is correct. Then, based on the computer-generated feedback ("correct" or "incorrect"), they must find out the pre-determined "correct" value and get as many correct answers as possible. Each participant was given four sets of 10 trials, and each set contained a different value as being correct. At the end of the 10th trial, participants' performance was displayed (e.g., "Your score for Question 1 is: 4/10"). After seeing their performance, the last question of each set displayed the 8 values separately and instructed the participants to choose which value out of the 8 that they think was pre-determined to be correct.

However, the participants did not know that the feedbacks that they received were randomly generated, and there was no way to figure out the solution to this task. The task was unsolvable as it was done to induce the feeling of learned helplessness. To ensure the consistency of the current study, the feedback was randomly generated beforehand, meaning that all participants received the same amount of "correct" and "incorrect" feedback regardless of their choices. For instance, all participants scored 4/10 for their first set of 10 trials. Moreover, the last question of each set that asked participants to choose 1 out of 8 values was also unsolvable, as all participants received an "incorrect" feedback regardless of their choices.

3.3.2 Learned Helplessness Scale (LHS)

The Learned Helplessness Scale (LHS) developed by Quinless and Nelson (1988) was used to measure learned helplessness. A modification in the instruction of the scale had been

made in which participants were instructed to answer the scale based on their feelings towards the concept formation task. This scale consisted of 20 self-report items (e.g., "When I perform poorly, it is because I don't have the ability to perform better."). This scale is scored on a four-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*), with a total score that ranges from 20 to 80. A higher score indicates a greater degree of learned helplessness. The LHS has shown high internal consistency reliability (α = .85; Quinless & Nelson, 1988). Moreover, LHS displayed adequate concurrent validity as it correlates significantly and positively with Beck's hopelessness scale (r = .252; Beck et al., 1974) and negatively with Rosenberg's self-esteem scale (r = -.622; Rosenberg et al., 1965).

3.3.3 Langerian Mindfulness Practice

Participants in the treatment group were given a mindfulness intervention instruction similar to the instruction used in (James, 2018) that guides them through the process of noticing new details. The instructions included noticing three new details about their body, about an object, and about their environment. Afterward, the participants were instructed to take deep breaths, close their eyes and recall the nine new details that they noticed for two minutes.

3.3.4 BBC Newspaper Article

An article titled "*Diesel vehicles are important for the UK economy, says industry*" was used as a control condition for Langerian mindfulness treatment (BBC, 2017). This is replicated from a mindfulness study conducted by Mantzios et al. (2019). Participants were asked to read through the news article as many times as they like before writing a summary of the article in two minutes. The aim of this task was to let participants go through a bogus task with a similar duration that will not produce any emotional reactions that can influence their performance in this study.

3.3.5 Positive State Mindfulness Scale (PSMS)

The positive state mindfulness scale (PSMS; Ritchie and Bryant, 2012) is a nine-item questionnaire that used to measure participants' state Langerian mindfulness. The scale consisted of three subscales, which are focused attention (FA), novelty appreciation (NA), and open-ended expectations (OEE), and each subscale contains three items. The PSMS is rated on a six-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The scale is scored by summing up each subscale separately, and higher scores in each subscale indicate higher levels of the related dimension. Sample items from each subscale include: "My attention is focused on what is happening right now." (focused attention), "I enjoy the newness of this moment." (novelty appreciation), and "Right now I am not sure what to expect." (open-ended expectation). The current study chose the PSMS to measure state Langerian mindfulness, although the three subscales of PSMS do not measure the exact four primary components suggested in the Langerian mindfulness scale (novelty seeking, novelty producing, engagement, & flexibility; Pirson et al., 2012). This was due to PSMS is the only scale in the current literature that measures state Langerian mindfulness to our knowledge. Firstly, PSMS is different from the Langerian mindfulness scale as novelty appreciation refers to enjoying and appreciating new things while novelty seeking refers to being curious and seeking new details in the environment, and novelty producing refers to creating new categories and innovation. Next, open-ended expectation, which is being open to uncertainties, is also different from flexibility, which is being able to consider things from multiple perspectives. However, focused attention did share some similarities to engagement as both constructs describe an active focus of attention to the present moment.

The PSMS demonstrated good internal consistency reliability (α = .70; Ritchie & Bryant, 2012). Overall, satisfactory convergent and discriminant validity of the scale were demonstrated as each dimension correlated differently to criterion measures of mindfulness, savoring beliefs, uncertainty tolerance. Evidence for its convergent validity was also found as novelty appreciation, and open-ended expectations were significantly and positively correlated with the Dispositional Mindfulness/Mindlessness Scale (Haigh et al., 2010). Adequate convergent validity was also demonstrated from significant positive correlations between focused attention and novelty appreciation with measures of savoring beliefs (Savoring Beliefs Inventory; Bryant, 2003) and uncertainty tolerance (Uncertainty Tolerance Scale; Dalbert, 1999, as cited in Ritchie and Bryant, 2012). Finally, the authors also found support for predictive validity through experiments that manipulated positive mindfulness. Specifically, participants that went through repetitive and boring tasks scored lower on the novelty appreciation, whereas participants that went through a problem-solving task scored higher on focused attention.

3.3.6 Solvable Anagram-Solution Task

An anagram task derived from past learned helplessness experiments was used to measure the impact of learned helplessness induced in the concept formation task (McLaughlin et al., 2010; Hommel et al., 2006). Twenty solvable anagrams were being shown to the participants, and participants were instructed to unscramble the letters and type their answers in the space provided in the Qualtrics. Each anagram consisted of five scrambled letters, and they were being scrambled in the same order such that all solutions follow the same sequence of 5-3-1-2-4. Participants were informed that they are allowed to try as many times as they want within a 100 second time limit, and all the anagrams can be solved with a pattern. The number of anagrams that participants accurately solved was measured and used as the dependent variable.

3.4 Research Procedure

The ethical approval was obtained from the UTAR Scientific and Ethical Review Board with the reference number of U/SERC/189/2020 before conducting the pilot study and actual study (see Appendix A). The selected independent variable is the Langerian mindfulness, whereas the dependent variable is learned helplessness. There were some issues identified in the pilot study, and the issues were being improved in the actual study.

By referring to Figure 3, the final year project registration form (see Appendix B) and poster (see Appendix C) for the online experimental study was distributed through various online platforms such as Facebook, Instagram, WeChat, WhatsApp, and Microsoft Teams. The purpose of the registration form was to let the participants register timeslots for themselves. The participants were required to fill in their personal details and their available timeslots. The maximum number of participants for each timeslot was 30 people. After the registration process, the researchers had filtered out the registered individuals who were not eligible to participate in the current study. Next, the researchers sent a confirmation message to each participant and added them to the online platform, Skype, or Microsoft Teams respectively (see Appendix D). The purpose of adding the participants to online platforms to conduct the experiment was to offer the participants maximum involvement and minimum external interference in the study. Besides, it was aimed to control the environmental factor. After that, a pre-experiment briefing was conducted to explain the procedure of this study to each participant through the online platform (see Appendix E). The question-and-answer session was conducted after the briefing session to let the participants have a clear direction to the study.

Afterwards, the participants filled up the consent form before starting the study (see Appendix F). The consent form included some important details of the study, namely the

research topic, the purpose of the study, procedures, risk and discomfort, the confidentiality of data, and contact information. A fake title, "The Effects of Emotional Well-Being on Logical Reasoning and Linguistic Ability among Undergraduates in Malaysia" was formed to avoid the participant's bias to the topic and minimize the inaccuracy results in the study. The participants were told to go through a series of games in the study with the purpose of assessing the effects of emotional well-being on logical reasoning and linguistic ability.

After filling-up the consent form, the participants were tested with concept formation tasks to induce the learned helplessness in the present moment (see Appendix G). In the concept formation task, the participants were instructed to go through 4 sets of questions, and each question contained 10 trials (40 questions in total). In each trial, the participants looked at two images simultaneously, with one to the left and another to the right. The images composed of 8 different values which included colour (green or red), shape (round or square), font size (big or small), and letter (letter A or letter T). The participants were being told that there was a correct answer in all the trials, and they were asked to guess and choose which side (left or right) contains of the correct value. They immediately received a "correct" or "incorrect" feedback with sound effects after finishing each guessing. However, there was no correct value in all the trials. In other words, all the participants underwent the unsolvable concept formation task to induce the feeling of learned helplessness. Then, the participants were instructed to go through the Lerarned Helplessness Scale (LHS) to measure their perceived learned helplessness (see Appendix H).

Moreover, they were randomly assigned to either the Treatment group (Langerian mindfulness) or Control group (read and summarize the selected BBC newspaper article). For the participants in the Treatment group, the participants underwent the process of Langerian

mindfulness by noticing three new details (in a total of nine) for body, environment, and objects (see Appendix I). The instruction of Langerian mindfulness was presented in both sound and text versions in the Qualtrics software. They were asked to list down the new details on each body, environment, and object before moving on to the next section. After identifying the nine new details, they were given two minutes to take deep breaths and recall the nine new details that they noticed previously. Conversely, the Control group participants need to read the selected BBC newspaper article (see Appendix J). The BBC newspaper article namely, *"Diesel vehicles are important for UK economy, says industry"* was also being shown in both sound and text version in the Qualtrics software. After participants read through the BBC news, they were given two minutes to write a summary of the BBC newspaper article. In both the Treatment and Control groups, the time limit was pre-determined as two minutes by using the Qualtrics software before they proceed to the following section. The participants were unable to skip to the next section within these two minutes. Then, the participants filled out the Positive State Mindfulness Scale to measure the perceived mindfulness level of each participant (see Appendix K).

Next, the anagram-solving task was used to measure the participants' level of perceived learned helplessness (see Appendix L). On this task, the participants were given 20 anagrams and asked to unscramble the letters to form a meaningful word. They were asked to answer the anagrams in the capital letter within the time limit of 100 seconds. All anagrams consisted of five scrambled letters and are following the same sequence of 5-3-1-2-4. The participants were told that they can try as many times as they want to figure out the solution patterns within the time limit. They can also submit their answer by clicking on the "submit" button at any time, while the participants who wish to give up may also leave the answer blank and click the "submit" button at any time.

Furthermore, the participants filled out the demographic information (see Appendix M), including name, e-mail address, phone number, age, gender, ethnicity, religion, state of birth, highest education level, higher education institution, and course of study. In addition, a debriefing section was conducted to reveal the real purpose of our study, namely, Langerian Mindfulness on Learned Helplessness through infographic and video (Appendix N). Lastly, the participants were asked to screenshot the last page of the study and post it to Google Drive to fulfill one of the lucky draw session requirements for the token of appreciation. The participants left the Skype or Microsoft Team meeting room after they completed the study. After that, the RM10 grab food gift card was sent to the 50 lucky winners through e-mail (see Appendix O), and the congratulations/ appreciation message was being sent to the participants (see Appendix P).

Figure 2

The Flow of Research Procedure
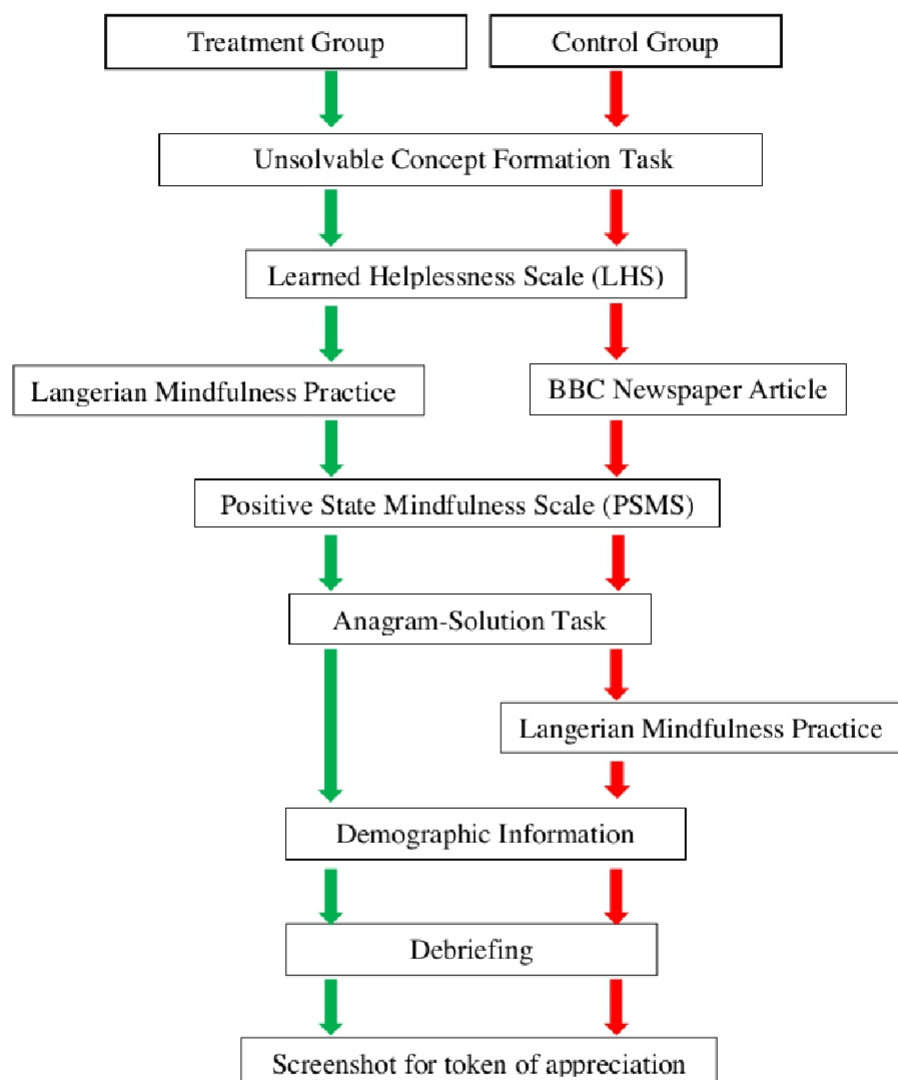
CHAPTER IV

Results

4.0 Pilot Study

A pilot study was conducted to examine the effectiveness of the manipulation of Langerian mindfulness, determine the sample size for the actual study, and validate the feasibility of the procedure of the actual study. A total of 34 participants were recruited and randomly divided into three groups, which were (1) Group 1 (Treatment-Langerian mindfulness), (2) Group 2 (Control-solvable concept formation task) and (3) Group 3 (learned helplessness) (see Figure 3). The main differences between the three groups are that Group 1 and Group 3 went through unsolvable concept formation task while Group 2 went through solvable concept formation task. Next, Group 1 practiced Langerian mindfulness practice while Group 2 and Group 3 read and summarized BBC news article.

In terms of LHS score, there was a statistically significant difference between groups as determined by one-way ANOVA ($F(2,31) = 4.131$, $p = .026$). A Tukey post hoc test revealed that Group 3 ($M = 52.00$, $SD = 5.510$) scored significantly higher compared to Group 2 ($M = 45.73$, $SD = 6.335$, $p = 0.28$). However, there was no statistically significant difference between Group 1 and Group 2 ($M = 47.09$, $SD = 4.182$, $p = .833$). This result was unexpected as both Group 1 and Group 3 went through the same unsolvable concept formation task, and thus should have share the same level of learned helplessness. As the pilot study only recruited 12 participants per group, this result was attributed to the small sample size of the pilot study.

For PSMS score, the FA dimension of the Group 2 ($M = 12.18$, $SD = 1.834$) and Group 1 ($M = 12.36$, $SD = 3.171$) were higher than Group 3 ($M = 11.50$, $SD = 2.541$). Similarly, the NA dimension of the Group 2 ($M = 13.09$, $SD = 1.814$) and Group 1 ($M = 12.82$, $SD = 2.926$) were

also higher than Group 3 ($M = 11.58$, $SD = 2.353$). In contrast, the OEE dimension of the Group 2 ($M = 13.55$, $SD = 2.067$) and Group 1 ($M = 12.27$, $SD = 2.936$) were lower than Group 3 ($M = 14.33$, $SD = 1.775$). However, no significant difference were found using one-way ANOVA for all three dimensions, which are FA ($F(2,31) = .364$, $p = .698$), NA ($F(2,31) = 1.296$, $p = .288$), and OEE ($F(2,31) = 2.337$, $p = .113$) respectively.

Finally, one-way ANOVA showed no significant difference in terms of the number of anagram questions solved between the three groups ($F(2,31) = 1.182$, $p = .320$).

The pilot study results indicated that the manipulation of learned helplessness was effective, but the manipulation of Langerian mindfulness was ineffective. Thus, in the actual study, an improvement in the manipulation of Langerian mindfulness was made in which participants were instructed to pay attention to the difference between the concept formation task and the anagram task (see Appendix Q).

Figure 3

The Flow of Pilot Study

4.2 Descriptive Statistics

Table 1 shows the participants' demographic information. The participants' age ranged from 19 to 25, with a mean age of 21.19 (SD = 1.179). A majority of the participants were female (72.7%), and only 27.3% were male. Most of the participants were Chinese (84.2%), followed by Indian (9.7%), Malay (5.5%), and Others (0.6%). 66.1% of the participants were

Buddhist, 19.4% of them were Christian, followed by Hindu (6.1%), Muslim (4.8%), and Others (3.6%). All participants were undergraduate students. 79.4% of the participants were from Universiti Tunku Abdul Rahman (UTAR), while the other 20.6% were from other universities across Malaysia such as INTI International University ($n = 8$), Universiti Malaya ($n = 3$), Tunku Abdul Rahman University College ($n = 2$), Universiti Teknologi Mara ($n = 2$) and many more.

Table 1

Demographic Profile of the Respondents (N=165)

		Frequency	Percentage (%)	Mean	SD	Min.	Max.
Age				21.19	1.179	19	25
Gender							
	Male	45	27.3				
	Female	120	72.7				
Race							
	Chinese	139	84.2				
	Malay	9	5.5				
	Indian	16	9.7				
	Others	1	0.6				
Religion							
	Buddhist	109	66.1				
	Muslim	8	4.8				
	Hindu	10	6.1				
	Christian	33	19.4				
	Others	6	3.6				
Institution							
	UTAR	131	79.4				
	Others	34	20.6				

Note. SD = Standard Deviation

4.3 Assumptions of Independent-Sample T-Test

Firstly, the assumption of homogeneity of variances was not met, as Levene's test revealed a significant difference in the variance of anagram score between the treatment and control group; $F(1,163) = 4.173$, $p = .043$. Next, the assumption of normality was examined through skewness, kurtosis, and Kolmogorov Smirnov Test (see Table 2). Z-score for skewness and kurtosis was calculated by using the formulas below:27

$$Z_{Skewness} = \frac{Skewness}{SE_{Skewness}} \qquad Z_{Kurtosis} = \frac{Kurtosis}{SE_{Kurtosis}}$$

According to Kim (2013), the value of Z-score skewness and Z-score kurtosis greater than 3.29 or less than -3.29 indicates a violation of normality of data at $p < 0.05$ level of significance. Generally, no violation was found except for the skewness of the Anagram score for the control group, which had a Z-score of -3.485.

Finally, the Kolmogorov-Smirnov test revealed that only Learned Helplessness scores were normally distributed (see Table 2).

Table 2

Summary on Kolmogorov–Smirnov test

Variables	Control Group (n = 82)		Treatment Group (n = 83)	
	Statistic	Significance level	Statistic	Significance level
Learned Helplessness	.088	.170	.094	.064
Focused Attention	.171	.000	.104	.028
Novelty Appreciation	.133	.001	.113	.010

Open-Ended Appreciation	.141	.000	.108	.018
Anagram	.160	.000	.143	.000

4.4 Manipulation Checking

4.4.1 Learned Helplessness

As the solvable concept formation task was not used in this study, the effectiveness of learned helplessness manipulation cannot be measured. However, the consistency of learned helplessness induced between the two groups was examined using an independent-samples t-test. There was no significant difference in learned helplessness scores for Treatment ($M = 49.76$, $SD = 5.870$) and Control ($M = 48.55$, $SD = 5.259$) groups; $t(163) = .615$, $p = .546$. The result indicated that the two groups had similar learned helplessness levels as there was no difference in the Learned Helplessness scores between the two groups.

4.4.2 Langerian Mindfulness

To ensure successful induction of Langerian Mindfulness, an independent-samples t-test was conducted on the three subscales of PSMS. Firstly, no significant difference was found in Focused Attention $t(163) = 1.666$, $p = .098$. Similarly, there was no significant difference in the Novelty Appreciation of Treatment ($M = 12.57$, $SD = 3.053$) and Control ($M = 12.54$, $SD = 3.330$) groups; $t(163) = .6$, $p = .952$. Finally, there was a significant difference for Open-Ended Expectation $t(163) = 2.916$, $p = .004$. Open-Ended Expectation for Treatment group ($M = 13.30$, $SD = 2.408$) was significantly lower than the Control Group ($M = 14.43$, $SD = 2.548$). The effect (d) was 0.46, indicating a small effect.

4.5 Anagram Performance

A one-tailed independent-samples t-test was conducted to test the difference in Anagram

scores between Treatment and Control groups. As shown in Table 3, there was a significant difference, $t(163) = 1.781$, $p = .0385$. Mean anagram score for Treatment group ($M = 14.82$, $SD = 4.103$) was higher than the Control group ($M = 13.50$, $SD = 5.327$). The effect (d) was .028, indicating a small effect. The results supported the conclusion that the Anagram score between the two groups was significantly different.

Table 3

Summary of Descriptive Statistics for All Variables

	Control Group (n = 82)				Treatment Group (n = 83)				
	M	SD	Skewness (SE)	Kurtosis (SE)	M	SD	Skewness (SE)	Kurtosis (SE)	Cohen's d
LHS	48.55	5.26	.274 (.266)	-.075 (.526)	49.76	5.87	-.311 (.264)	-.696 (.523)	0.22
FA	12.57	3.11	-.863 (.266)	1.060 (.526)	13.30	2.47	-.441 (.264)	.697 (.523)	0.26
NA	12.54	3.33	-.561 (.266)	.037 (.526)	12.57	3.05	-.364 (.264)	-.145 (.523)	0.01
OEE	14.43[b]	2.55	-.695 (.266)	.503 (.526)	13.30[b]	2.41	.012 (.264)	-.381 (.523)	0.46
Anagram	13.50[a]	5.33	-.927 (.266)	.114 (.526)	14.82[a]	4.10	-.607 (.264)	-.708 (.523)	0.28

Note. SD = Standard Deviation, M = Mean, SE = Standard Error, LHS = Learned Helplessness Scale, FA = Focused Attention, NA = Novelty Appreciation, OEE = Open-Ended Expectation

[a]Significant difference was found using one-tailed independent T-test.

[b]Significant difference was found using two-tailed independent T-test.

Chapter V

Discussion

5.0 Discussion

Aforementioned, the current study aimed to examine the effectiveness of Langerian mindfulness practice in reducing learned helplessness among undergraduates in Malaysia. There was no significant difference in the LHS between the Treatment and Control groups. While for PSMS, a significant difference was found in the OEE dimension. Notably, the current study observed that Langerian mindfulness has successfully reduced learned helplessness.

Firstly, the current study's findings showed no significant difference in the LHS between the two groups. Hence, it can be concluded that participants in both groups were in the same helpless condition before they continue with the Langerian mindfulness practice or BBC news.

Remarkably, the current study observed a significant difference between the Treatment and Control groups in the OEE dimension of PSMS in which the Control group participants had higher OEE than the participants in the Treatment group. This seemed to be contradictory with Langer (1997) as well as Langer and Moldoveanu (2000) that suggested mindful individuals to be more open or accepting towards uncertainty. However, the result is aligned with another study by Ritchie and Bryant (2012). The researchers mentioned that mindless people would be unaware of their surroundings; they will have fewer expectations about what will happen next in positive situations. In other words, mindless people are usually uncertain of what to expect and cannot predict how things will proceed. This is the reason why they believe that something could happen at any time.

Although the current study results accord with the claims by Ritchie and Bryant (2012),

still, there are some alternative accounts of why mindless individuals scored higher in OEE than mindful individuals. Maymin and Langer (2021) mentioned that people who are mindful would be less prone to cognitive biases and less likely to use faulty heuristics. Thus, people who are more mindful are more rational and are more conscious of context and possibilities, making them less likely to use the incorrect heuristic. Additionally, OEE items did not distinguish between positive expectation and negative expectation (i.e., Right now, I am not sure what to expect).

Following this way, the results of the current study could be interpreted as mindless individuals who scored high in OEE were not only having positive expectations but also coupled with plenty of negative expectations, including cognitive biases and false heuristics. Similarly, Pagnini et al. (2016) highlighted that relying on past categories creates negative expectations for the present, limiting the perception of control. By assuming the amounts of negative expectations drawing from past experiences built up and then coupled together. It is suggested that the participants in the Control group had more open-ended negative expectations. They were in a mindless state during the experiment; they had plenty of negative and false expectations; susceptible to false heuristics; did not know what would happen next, and were unsure how to respond rationally to the possible task. The negative expectations then raised the level of OEE among participants in the Control group.

Furthermore, the current study successfully demonstrated the effectiveness of Langerian Mindfulness in reducing learned helplessness by comparing the performance of both groups on a subsequent task, anagram. The results showed a significant difference between the Treatment group and the Control group, with the Treatment group scored higher in the anagram task than the Control group. The findings are consistent with Maier and Seligman's original learned helplessness model, which revealed that individuals who have previously experienced

uncontrollability developed an expectation of response-outcome independence. Therefore, individuals tend to underestimate the relationship between their responses and the outcomes in later tasks even they have control over it (Maier & Seligman, 1976). Nevertheless, Pagnini et al. (2016) emphasized that learned helplessness is an intense form of mindlessness. In this case, the past associations (failure in solving concept formation task) are mindlessly carried into the present (the anagram task), even though the situation has changed. This elaboration further explained the underlying mechanism for the low score in the anagram task among the Control group participants. Learned helplessness disallows quick, subtle changes to present moment experiences (Baltzell & Cote 2016).

On the other hand, the participants who had undergone Langerian mindfulness practice did not bring their failure in the prior concept formation task to the anagram task (present). Thus, the level of learned helplessness among the Treatment group participants has decreased as they scored higher in the anagram task. This is in line with the past study, which mentioned that a mindful individual could flexibly adapt to the present moment without relying on past experiences that the situation is inescapable (Baltzell & McCarthy, 2016). Therefore, learned helplessness does not occur when a person is in a mindful state (Langer, 1989; Pagnini et al., 2016). Overall, the result of this study revealed that Langerian mindfulness helped the participants suppress, inhibit, or eliminate maladaptive habits, heuristics, as well as automatic thoughts, as known as mindlessness.

5.1 Theoretical Implications

This study's finding contributes an explicit understanding and explanation of the impact on Langerian mindfulness in reducing learned helplessness by using the Informational Theory of Learned Helplessness (Krofta, 1993). The Informational Theory of Learned Helplessness

(Krofta, 1993) attempts to explain that people will be situated in cognitive exhaustion and lead to learned helplessness after the repeated failures on a specific task or facing uncontrollable events. People will rely on past experiences and form expectations on a specific task when they experienced multiple failures. Thus, cognitive exhaustion will be formed. People will be unable to remove the state of cognitive exhaustion and this will eventually lead to learned helplessness without changing an environment.

On the contrary, practicing Langerian mindfulness can reduce individuals' learned helplessness and prevent them from relying on past experiences by actively seeking and drawing the distinction around the environment. Langerian mindfulness refers to the process of accepting uncertainty and integrates oneself with the new situation as the environment is constantly changing (Khoury et al., 2017). It can help people break through the expectation of failing on a specific task by noticing that the situation is constantly changing. In the current study, the participants were asked to notice three new details in their environment to let them notice that the situation is constantly changing. The Treatment group participants (mindfulness) had answered more numbers of anagram than the Control group (mindlessness). The results illustrated that Langerian mindfulness can effectively reduces learned helplessness by noticing the new changes in the present moment without needing to escape from the current situation.

5.2 Practical Implications

Past studies repeatedly suggested that Langerian mindfulness can reduce learned helplessness (Langer, 1989; Pagnini et al., 2016), but no experimental study has been studied to validate this relationship. Also, past studies were unable to identify an effective way to alleviate learned helplessness. This online experimental study provides sufficient insights on the empirical evidence in the experimental manipulation of Langerian mindfulness to fill the literature gap in

the related research area. A reference for future research study regarding Langerian mindfulness and learned helplessness has been formulated in this study.

On the other hand, this study had successfully proposed and demonstrated an effective yet easy-to-practice method to reduce learned helplessness. The current study indicated that the participants could practice Langerian mindfulness in a simple way by actively noticing the new distinction in the context to keep themselves in the present moment and reduce learned helplessness. Moreover, students will increase social-emotional learning and achieve a better quality of life by practicing Langerian mindfulness (Pagnini et al., 2018). Besides, relevant authorities or policymakers can utilize Langerian mindfulness as the intervention of learned helplessness in the education system as most students were found to have different levels of learned helplessness. For instance, the practitioners can teach Langerian mindfulness twice a week in class to alleviate the learned helplessness. It would be beneficial to the development of each student's psychological and academic well-being and at the same time extending the work of Ellen Langer.

5.3 Limitations

Several limitations are identified in the current study. First, the undercoverage bias was found in this study as the demographic results showed an unequal number of participants in terms of gender and ethnicity group. It might result in underrepresented subgroups, leading to an inability to generalize the results to the whole population (Bornstein et al., 2013). However, the current study had some difficulties in recruiting participants as this study was conducted through an online survey method due to the COVID-19 pandemic. Thus, convenience and snowball sampling methods were utilized to recruit participants. Besides, the target participants in the current study were the undergraduates' population in Malaysia. Although the results had

primarily reflected undergraduates' population in Malaysia, it limits the current findings'

generalizability to diverse populations, contexts, or settings.

Next, the available instruments in current literature are inadequate in measuring the state

Langerian mindfulness in the present moment. For instance, Langerian Mindfulness Scale (LMS)

focuses on trait Langerian mindfulness of an individual (Pirson et al., 2012). In addition, the

Current Experiences Inventory (CEI) is designed to access state Langerian mindfulness and it

measures the four factors — novelty seeking, novelty producing, engagement, and flexibility,

which matches with the construct of Langerian mindfulness (Krech, 2006). However, CEI

focuses more on the overall state Langerian mindfulness in a day instead of accessing the state

Langerian mindfulness based on a specific task. Therefore, the Positive State Mindfulness Scale

(PSMS) has been chosen to measure the state Langerian mindfulness in a specific task. It was

developed based on the prototype of LMS, and it intends to measure the state Langerian

mindfulness. Although the subscales of PSMS did not perfectly measure the four primary

components of Langerian mindfulness, it is the most suitable scale for this study in measuring

state Langerian mindfulness based on those available instruments.

Moreover, the effectiveness of learned helplessness manipulation was not clearly

demonstrated in this study. The pilot study that compared LHS scores between participants that

received solvable and unsolvable concept formation tasks only yielded a mixed result. Also, the

actual study did not include a solvable concept formation task as it would require more

participants.

Lastly, the limitation of using anagram as a dependent variable is that anagram scores

depend on the participants' English proficiency. If participants were not familiar with a word in

the anagram question, they would not be able to answer it regardless of whether they were

feeling helpless. For example, one of the anagrams is 'UNATJ', the answer is 'JAUNT' by following the sequence of 5-3-1-2-4. If some of the participants were not familiar with the word 'JAUNT', they would not be able to answer the anagram. Consequently, this may also explain the small effect size found in the present study.

5.4 Recommendations for future study

Firstly, future researchers can implement a stratified sampling method to avoid the undercoverage bias. The stratified sampling obtains the sample by dividing the population into strata (sub-groups) according to various homogeneous features such as age, gender, ethnicity. Then, the researchers will randomly select the participants from each stratum (Acharya et al., 2013). With that, the study could avoid underrepresenting some subgroups and reach an average number of participants in different sub-groups. Besides, future studies could replicate the current research in different settings or with different populations to examine whether Langerian mindfulness is applicable in reducing learned helplessness in other contexts such as medical, sport, and workplace settings.

Future studies can also consider developing a state Langerian Mindfulness scale that could perfectly measure the four primary components of Langerian mindfulness, including novelty seeking, novelty producing, engagement, and flexibility. This action can help measure the state Langerian mindfulness more accurately and facilitate the development of the related research field.

Thirdly, it is recommended for future studies that utilize the concept formation task to implement a control group that receives the solvable version of the task. This can ensure the effectiveness of learned helplessness manipulation.

Lastly, the current study suggests future studies to develop an alternative online method or task that will not be affected by linguistic ability instead of using an anagram task to measure the impact of learned helplessness induced in the concept formation task. In this case, every participant will have equal ability in answering the tasks.

Langerian Mindfulness on Learned Helplessness among Undergraduates in Malaysia

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Langerian Mindfulness on Learned Helplessness among Undergraduates in Malaysia

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