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The Effect of Priming of Emotional Intelligence on Test Anxiety

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Abstract

This study aimed to examine the effect that priming emotionally intelligent self-concepts could affect cognitive test anxiety. I hypothesized that priming people with emotionally intelligent self-concepts would result in higher emotional intelligence scores and lower test anxiety scores. I expected that the emotional regulation aspect would have the highest difference in scores between the prime and control group. In addition, I expected to find that higher levels of test anxiety would be negatively correlated with lower levels of EI, and that higher levels of GPA would be related to higher levels of EI. A sample of 71 undergraduates responded to emotional intelligence prime questions, a minute math test, the Cognitive Test Anxiety Scale, and the Mayer-Salovey-Caruso Emotional Intelligence test. The prime did not significantly affect test anxiety or emotional intelligence. Higher levels of test anxiety did correlate with lower overall emotional intelligence, and higher levels of GPA were related to higher levels of EI. Possible reasons why the prime did not have the intended effect were discussed. Suggestions for future research were made.

Introduction

Emotional intelligence (EI) is the ability of people to process, understand, and regulate emotions within themselves and in their relationships (Mayer & Salovey, 1997; Petrides, Mikolajczak, Mavroveli, Sanchez-Ruiz, Furnham, & Pérez-González, 2016). More and more research is being done on EI and how it interacts with different aspects of life, including sports, therapeutic treatments, medical studies, school performance, and coping mechanisms (Laborde, Dosseville, & Allen 2015; Jahangard, Haghighi, Bajoghli, Ahmadpanah, Ghaleiha, Zarrabian, & Brand, 2012; Libbrecht, Lievens, Carette, & Côté, 2014; Austin, Saklofske, & Mastoras, 2010; Thomas, Cassady, & Heller, 2017). One growing area of research examines the possible relationship between test anxiety and different types of EI. Several researchers have found significant relationships exist between lowered test anxiety and greater emotional intelligence (Abdollahi, & Abu Talib, 2015; Ahmadpanah, Keshavarz, Haghighi, Jahangard, Bajoghli, Bahmani, & Brand, 2016). Another developing field examines the relationship of priming and EI, which has few, but significant findings that emotional intelligence can increase with priming (Schutte & Malouff, 2012). More research into these areas is crucial to creating a more complete model of how emotional intelligence interacts with anxiety and cognitive abilities. This study asks the research question: How do priming, test anxiety, and emotional intelligence interact with one another?

Emotional Intelligence

Research in the field of emotional intelligence has grown exponentially in recent years, which has helped to develop stronger theoretical models that describe how emotional intelligence operates, including the ability model, the trait model and the tripartite model (Mayer & Salovey, 1997; Petrides, 2009; Laborde et al., 2015). Mayer and Salovey (1997) laid the ground work for

the ability EI model by proposing that there were four different facets of EI: Emotional Perception (perception and expression of emotions in self and others) Emotional Facilitation of Thought (ability to understand emotions and problem-solve), Emotional Understanding (how emotions interact in different scenarios), and Emotional Management (regulation of one's own and others emotions). This model focused on a person's actual ability to perform emotional intelligence skills through objective tests that measured each of the different aspects of ability EI (Mayer, Salovey, Caruso, & Sitarenios, 2003). One of the most popular tests to measure ability EI is the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) but there are other models that also use objective measures to assess ability, such as the Vocabulary of Emotions Test (VET) which measures how well people appropriately choose a word to describe an emotion (Mayer, Salovey, Caruso, & Sitarenios, 2003, Costa & Faria, 2015). The ability model, out of all of the EI models, is shown to have the strongest relationship with cognitive ability, as there have been positive correlations found between ability EI and cognitive ability (Zeng & Miller, 2003 as cited in Adeyemo, 2007). Research has also shown that ability EI is connected to general intelligence because of how it uses crystallized intelligence (memorized background knowledge) for keeping emotional information and fluid intelligence (critical thinking) that involves problem solving in emotional situations (Côté, 2010 as cited in Costa & Faria, 2015). As described in the four components of the model outlined above, the ability scale is designed to measure respondents' ability to perceive, think about, understand, and regulate emotions.

Trait EI focuses on a person's self perception of their emotional intelligence (MacCann, Fogarty, Zeidner, & Roberts, 2011). Trait EI generally measures "emotion-related behavioural dispositions" that outline how a person will react to different emotional situations (Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009, p. 36). It measures a person's internal evaluation of

their emotional abilities and how well they see themselves performing on emotional tasks (Petrides et al., 2016). Unlike ability emotional intelligence, there has been no link found to cognitive ability (Sanchez-Ruiz, Mavroveli, & Poullis, 2013). Trait EI is usually measured through self-reports because it is methodologically easier to use, although it captures a person's subjective perception of themselves (Sanchez-Ruiz et al., 2013; Nelis et al., 2009). One measure of Trait EI that demonstrates this is the Trait Emotional Intelligence Questionnaire (TEIQue) which offers a series of self-report questions that measure several different facets of emotional intelligence (Petrides, 2009).

The tripartite model was created by Mikolajczak (2009) and combines aspects of the two previous models into three levels—knowledge, ability and trait EI. The knowledge aspect "refers to the complexity and width of emotion knowledge" and focuses on how people know what to do in emotional situations (Nelis et al., 2009, p.36). The ability level examines how capable a person is to actually carry out a strategy to help with an emotional situation based on what they know, i.e. a person applying a helpful strategy to cope with stress (Laborde et al., 2015; Nelis et al., 2009). The third level is trait, which is based on "emotion-related dispositions," and is what people actually do in emotional situations (Nelis et al., 2009 p.36) Nelis, Quoidbach, Mikolajczak, and Hansenne, explain the discrepancy between ability and trait EI as a difference in people's typical performance; even if a person has the capability to use emotion-based strategies in difficult situations, (ability EI), and they perceive themselves to be emotionally intelligent, they may not actually act emotionally intelligent (trait EI; 2009)

These theories attempt to explain how emotional intelligence relates to different aspects of life and why some aspects of EI are more closely related to some constructs than others. The present study will mainly focus on ability emotional intelligence because it has the closest

connection to cognitive ability, and could therefore explain the connections between the cognitive aspect of test anxiety, priming, and emotional intelligence.

Text Anxiety and Emotional Intelligence

According to the DSM-5, test anxiety is a type of social phobia, which is defined as fear of a social situation that exposes people to possible examination by others (Beidel, Bulik, Stanley, & Taylor, 2018; Ahmadpanah et al., 2016). Test anxiety specifically occurs when a person believes they will not meet the standards required to do well on a test and are therefore exposed to negative examination of others (Harpell & Andrews, 2013). There are generally two dimensions to test anxiety: emotionality and cognitive test anxiety (Cassady & Johnson, 2002). Emotionality is comprised of the physical feelings of anxiety like, "headache, nausea, diarrhea, excessive sweating, shortness of breath, rapid heartbeat, light-headedness and feeling faint" (Pena & Losada, 2017, pp. 1). Cognitive test anxiety is comprised of the racing thoughts that occur during a test: comparing the self to others, preoccupation with a sense of failure, low confidence in performance, overwhelming worry, low concentration levels, difficulty thinking and a very low sense of self-worth (Hembree, 1988, as cited in Cassady & Johnson, 2002; Pena & Losada, 2017). There are models that include other factors in addition to emotionality and cognitive test anxiety (such as worry, confidence levels, etc.; Harpell & Andrews, 2013). However, all models contain at least a cognitive and physiological aspect to test anxiety (Cassady & Johnson, 2002; Harpell & Andrews, 2013; Pena & Losada, 2017). Although the physiological factors that occur during test anxiety can be extremely cumbersome, Hembree (1988) found that the cognitive aspect of test anxiety was more detrimental to test performance than the emotionality aspect of test anxiety (as cited in Cassady & Johnson, 2002). This is possibly due to the *cognitive interference model* that suggests students do poorly on exams

because they cannot suppress the other anxious thoughts that occur during a test, which interfere with their ability to think about what is relevant to an exam (Cassady & Johnson, 2002). Those who have more test anxiety than others also appraise more situations to be threatening, where those who have lower levels of test anxiety see the same situation as difficult (Harpell & Andrews, 2013). Due to this difference in appraisal, the person with more test anxiety focuses on their thoughts of failure and less on the task at hand (Harpell & Andrews, 2013). The cognitive aspect, then, seems to be the most detrimental to test performance. With this in mind, it is important to examine ways in which test anxiety, especially the cognitive aspect, can be treated.

Researchers have found that higher scores of emotional intelligence have strong correlations with lower scores of test anxiety (Ahmadpanah et al., 2016; Abdollahi, & Abu Talib, 2015; Thomas, et al., 2017). Ahmadpanah et al. (2016) demonstrated this in a study on 200 medical students at the Hamadan University of Medical Sciences in Iran, during midterm season of the spring semester. They used The Farsi Test Anxiety Inventory by Abolghasemi et al. (1996) and Ejei et al. (2011) and the Emotional Quotient Inventory by Bar-On (1997), translated into Farsi by Jahangard et al. (2012) to measure the relationship between test anxiety and emotional intelligence. They found gender differences, with females scoring higher with a medium effect size. They also found that higher scores of emotional intelligence, and specifically emotional regulation, correlated with lower levels of test anxiety. In fact, they found that higher scores in emotional regulation predicted lower scores of test anxiety better than anything else. This significant finding suggests more treatments involving emotional intelligence may help to lower levels of test anxiety in students.

Another study done by Abdollahi and Abu Talib (2015) hypothesized that emotional intelligence mediated the relationship between perfectionism and test anxiety. They predicted

that students with high scores of perfectionism would have lower test anxiety if they had higher scores of emotional intelligence. They studied 520 students who were in grades 9-12 and measured their levels of perfectionism, emotional intelligence and test anxiety through trait EI scales. They confirmed their hypothesis and found that that those with higher scores of perfectionism, and lower scores of emotional intelligence, had higher text anxiety scores. This demonstrated further the negative correlation between emotional intelligence and test anxiety. With more and more studies demonstrating the relationship between EI and test anxiety, it becomes increasingly important to find ways to apply this research in practical ways.

Priming and Emotional Intelligence

The environment in which people find themselves can have a great impact on their thinking, even without their awareness (Wheeler & Demarre, 2009). Priming occurs when a person is introduced to a stimulus that activates a certain concept in the mind, which then makes it more likely for thoughts and behaviours related to that concept to transpire (Wheeler, DeMarree, & Petty, 2007). Most of the time, this happens completely unconsciously. Priming is powerful in that it does not necessarily activate just the concept, but it also activates memories that surround that concept, which can make it a great tool for influencing behaviour. There are several proposed pathways for how different types of priming affect behaviour, (Wheeler & DeMarre, 2009). See Figure 1 for the different proposed mechanisms of prime to behaviour as demonstrated by Wheeler and DeMarree (2009).

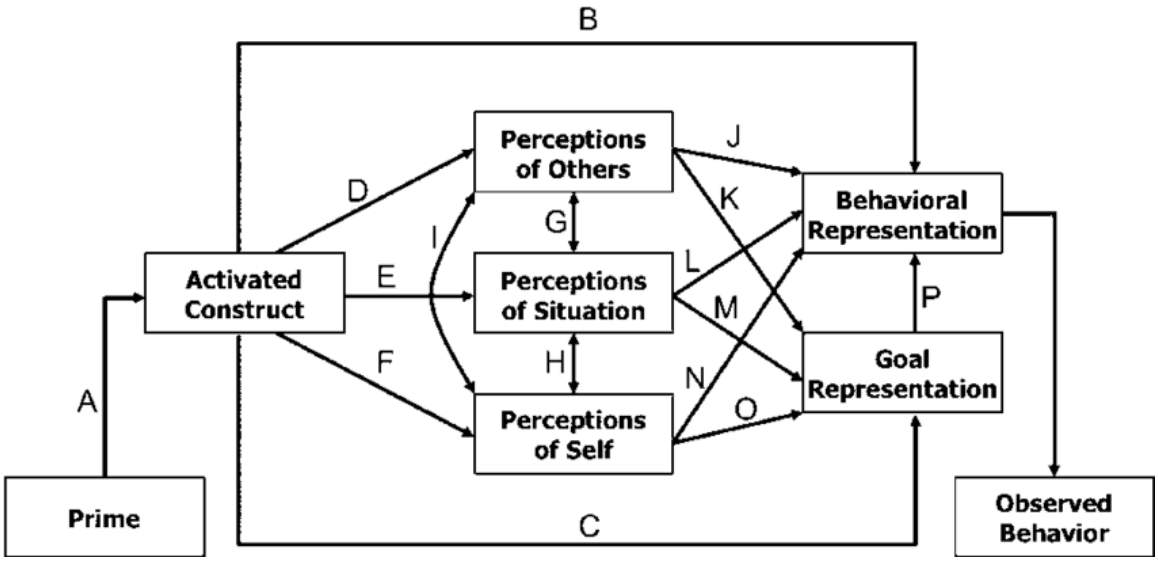

Figure 1: "Proposed mechanisms for prime to behaviour effects." as Demonstrated by Wheeler and DeMarree (2009) p. 567

The first proposed pathway is that the prime directly activates a behavioural representation (A→B on the diagram). This is the simplest prime mechanism, where a prime is directly associated with a certain behaviour, which is then acted upon. One example Wheeler and DeMarree use is if a person is primed with the elderly stereotype of either easily forgetting things or being a slow walker, it would make it more likely for a person to act in that manner. They propose that the stronger the association is "between construct activation and behavioral representation," the stronger the effects of the prime will be on behaviour. (p. 568).

The second proposed pathway is that the prime activates a goal representation, which then activates a behavioural representation, (A→C→P on the diagram). This prime mechanism is moderated by the goal in mind, which then activates the behavioural representation. The example Wheeler and DeMarree give is being primed by "one's office may activate the goal to work to the extent that working is a goal strongly associated with one's office" (p. 569). The attitude of a person toward the goal can affect behaviour, i.e. if they disliked work and were primed with the

office, they might be more hesitant to start work. The action associated with the goal can also affect behaviour, i.e. being primed with the office which activates the work goal may prompt more work on the computer. Wheeler and DeMarree also explain the possible discrepancies between the goal and behaviour, as the activation of the goal representation may activate behaviours more related to the goal than the actual behaviour. For example, the office prime might not lead to a greater work ethic directly, but activate the goal of working harder which could result in behaviour that leads to a greater work ethic or not "as [a] goal could be pursued in a number of ways, some of which might be more successful than others" (p. 569).

Then there is the way in which perception affects primes. Primes that "involve perceptions of a relevant target (i.e., other people, the situation, or the self)" can affect the prime to behaviour pathway (p. 570). These perceptions may be conscious or unconscious, and there are often implicit perceptions of people, situations, and self that can affect the prime to behaviour pathway.

The perceptions of persons mechanism is influenced by how a person perceives others according to the prime, which then affects goal and/or behaviour representation, which affects action (A→D→J or A→D→K→P on the diagram). The prime is then mediated by how a person perceives others, and that perception affects the how the person behaves. An example of this is seen in a study by Smeesters, Wheelers, & Kay (2009). They primed participants with unkind or neutral words, and then they had to divide money amongst themselves in an ultimatum game with a partner in a separate cubicle. If one partner suggested the money be split a certain way and the other person accepted, the money was split. If the partner rejected, neither partner would receive money. The participant was given a brief description of the other person related to the prime they had received earlier. The partner came into the room very briefly and said few

words. Then they had to rate the partner on whether they were kind or unkind, and the unkind prime effected the perception of the partner negatively. The perceptions of others, then, can affect the primed behaviour. This is also especially true if the prime is other-focused, because when people are focused on others in interactions, their perceptions of others are more relevant and can therefore have a stronger effect on behaviour.

The perceptions of situations mechanism involves a prime being affected by a person's perception of their situation, which then affects goal/behaviour representation, which then affects their behaviour (A→E→L or A→E→M→P on the diagram). For example, if a situation was primed with stressful or peaceful primes before having to interview someone, they may be more inclined to read the situation as stressful or relaxing. If there is a situation in which behaviour is greatly influenced by the situation (e.g. conformity), then this will increase the strength of the prime as well.

The final pathway is the perceptions of self mechanism, which is the most relevant for the project here. This involves a prime being affected by self-perception, which activates a goal/behaviour representation, which then affects behaviour (A→F→N or A→F→O→P on the diagram). Self-perception then moderates the strength of the prime. For example, people who were primed with the number seven before taking an implicit measure reported feeling luckier than those who were primed with the number 13 (DeMaree, Wheeler, & Petty, 2005). Thus associating seven with luck, and 13 with bad luck, affected that person's self-perception of luck, which influenced their behaviour on the report. This perception of self mechanism has been found to have a significant impact on behaviour (DeMaree & Loersch, 2009). In DeMaree and Loersch's (2009) study, they were interested in priming aggression in others, and wanted to see the effect the aggression prime had on behaviour when mediated by self-perception and

perception of others. In their first study, the task involved priming participants with African American or Buddhist monk related words, to which the participants were then asked to think about themselves or their best friend for two minutes. Then they had to play an online game in which they had to confer with a partner. If their partner failed the game, participants were instructed to assign a punishment to their partner: one of four increasing levels of hot sauce. The level of hot sauce was used to measure aggression, with higher levels of assigned hot sauce indicating greater aggression. Those who thought about themselves after the African American prime had the largest increase in aggressive behaviour. Those who reflected on their friend showed no significant increase in behaviour compared to the self concept prime. In the second study, participants who took the experiment were also asked to rate their level of aggressiveness and their friend's level of aggressiveness. In this study, those who were primed with the African American prime and then thought of themselves rated themselves as more aggressive, but if they focused on their friend after priming, then they rated their friend's aggressiveness higher with the African American prime, and lower with the Buddhist monk prime. This demonstrated not only the effectiveness of the self-concept prime, but also revealed the importance of the focus of the prime that followed the self-concept prime after, as "focusing on a given target [the self or the other] allowed the primes to affect perceptions of that object [self or other], while focusing on an alternative target prevented such changes" (p. 442).

One theory that explains how priming works within the perception of self pathway is the theory of the Active-Self Account (Wheeler et al., 2007). The Active-Self Account examines the differences between a person's static self-schema and their active self-schemas. The static self-schema draws on content that is consistently available about the self, through ideas and beliefs that have been there for a long time and are always available to be thought about or activated

(e.g., someone who has done well in school all their life may have a static self-schema that they are smart). The active self-schema is a person's current concepts that are activated based on a situation; a person thinks about certain aspects of their static self-schema based on the situation they encounter (e.g. a person is listening to music and thinks more quickly of the musical aspects of their identity; Schutte & Malouff, 2012). The active self-schema that is influenced by external situations can be influenced by primes that draw upon the static self-schema (Schutte & Malouff, 2012). This change in the active self-schema, based on the prime, can then influence a person's behaviour (e.g. person who thinks of her/himself as more musical may then be more open to joining a choir/band). Priming, then, can affect the information that comes to mind the quickest and can therefore influence the active-self concept more readily (Wheeler, DeMarree, & Petty, 2007).

Schutte and Malouff (2012) applied priming the active self-concept to influence emotionally intelligent behaviour. They hypothesized that when self-concepts pertaining to EI are primed, they will change the behaviour in the participants to act in more emotionally intelligent ways. They performed two experiments that examined this relationship. In the first experiment, they gave the experimental group a series of questions relating to times when they recently behaved in emotionally intelligent ways. They primed the control group by asking them questions pertaining to what they did during the day. Both sets of questions were designed to activate self-concepts, but only one set of questions was designed to prime self-concepts about emotional intelligence. They found that those who were in the emotional intelligence treatment condition did significantly better on ability emotional intelligence tests, suggesting that the prime actually altered their participants' behaviour. In the second experiment, they included the same two conditions from the first study, but they added two more treatments: one that primed people

to think of when they were motivated to behave in an emotionally intelligent manner but did not do so (i.e. when was a time you wanted to act emotionally intelligent but did not?), and one where they primed people to explain EI related concepts (i.e. what is emotional perception?). The results showed that the highest ability emotional intelligence scores were from those in the first treatment condition, who activated the emotionally intelligent self-concept more than the other treatments (i.e., the control, the motivation treatment, and the explanation treatment). EI increase was most significant in the emotional regulation aspect of the test, with those primed in the emotionally intelligent self-concept scoring higher in this area. This study demonstrates the possible effect that priming can have on increasing emotional intelligence.

Priming, Emotional Intelligence, and Test Anxiety

Numerous studies have demonstrated that the effectiveness of different types of EI treatments have positively affected health and behaviour; for example, treating borderline personality disorder, or developing mindful meditation practices that increase EI and lower stress levels (Janhangard et al., 2012; Charoensukmongkol, 2014). There is also an interest in developing potential treatments that utilize priming, as it has the potential to treat a wide variety of maladaptive behaviours (Shalev & Bargh, 2011). Based on the knowledge that treatments have been effective for emotional intelligence and the possibilities that priming offers as a treatment, I examined the effectiveness of priming EI as a potential treatment for test anxiety. Priming the self concept can show the strongest effects on behaviour when the factors tying the prime to the self-concept are increased (Wheeler & Demarre, 2009). Test anxiety, especially cognitive test anxiety, activates negative self-concepts in a person (Pena & Losada, 2017). Priming, then, could be useful to combat negative self-concepts in cognitive test anxiety through priming people to positive self-concepts. I hypothesized that priming people with emotional

intelligence related self-concepts would influence them to behave in a way that is more emotionally intelligent and have lower test anxiety. I expected that increasing their awareness of their own emotional regulation capabilities would lower their cognitive test anxiety and increase their ability emotional intelligence score. In addition I expected to find that higher levels of test anxiety would be negatively correlated with lower levels of EI, and that higher levels of GPA were related to higher levels of EI.

Method

Participants

A sample of 71 undergraduate students, 59 female and 11 male, from a Christian university in Ontario gave permission to participate in the study. The majority of participants were students from psychology courses in the fall semester. There were 67 students who identified that they were an undergraduate student, three who identified as not sure, and one person that was missing the answer of whether or not they were an undergraduate. The average age of the participants was 22 years old, (M=22.06) with the average age of the prime condition being 22 (M=22.5) and the average age of the control condition being 21 (M=21.6). There were 21 participants in the first year of their undergraduate degree, 15 students in their second year, 17 students in their third year, 12 students in their fourth year and five students in their fifth year or above. In the first GPA category, 0-2.69 (0-69%) there were six students; for the second category, 2.7-3.29 (70-79%), there were 23 students; for the third category, 3.3-3.69 (80-84%), there were 21 students; and for the fourth category, 3.7-4.0 (85-100%), there were 16 students. The racial/ethnic demographics of the participants were 43 students who identified as Caucasian, 12 students who identified as Black, four students who identified as West Indian, three students who identified as Latin American, three students who identified as Chinese, three who identified

as Filipino, two who identified as South Asian, two students who identified as Korean, two students who identified as Aboriginal, one student who identified as Arab, and four students who identified as Other. The participants could identify with more than one racial/ethnic identity.

Apparatus

Informed Consent Form

This was a form created by the researchers to inform participants of the purpose of research, the requirements of involvement in the study, the potential risks of the study, the benefits of the research, the nature of the voluntary participation, an assurance of confidentiality, the incentives for participating, contact information if they had questions, and an area to sign to indicate agreement to participate. There was also an area for them to indicate which range of GPAs they fall into: 0-2.69 (0-69%), 2.7-3.29 (70-79%), 3.3-3.69 (80-84%), or 3.7-4.0 (85-100%). This was done in order to ensure that an equal number of participants from each GPA category were represented in the prime and control groups in the experiment. Each consent form had a randomly assigned subject number that was written on top of every document that the participant received in order to link their responses on the various measurement tools (see Appendix A).

Priming Questions- (Schutte & Malouff, 2012)

These questions were taken directly from Schutte and Malouff's (2012) study on priming ability emotional intelligence (see Appendix B). The questions were administered on paper. The emotional intelligence prime contained seven questions asking the participant to recall when they had recently behaved in an emotionally intelligent manner (e.g. "Think of a time during the past several days when you successfully managed (regulated) your own emotion. What was the emotion and how did you manage it?", p. 616). Schutte and Malouff designed the emotional

intelligence primes to be based on the model of successful emotional intelligence found in Mayer, Salovey, and Caruso (2004). The control prime contained seven questions about activities done in the previous day (i.e. "What did you do between the time you woke up and mid-morning?", p. 616). Both sets of questions were intended to take anywhere from five to ten minutes to complete, matching in length and format with the key difference being that one requires an emotional intelligence aspect.

Minute Math questions (Web Math Minute, 2018)

Simple addition and subtraction questions that are generated randomly online were given to the participants to induce a small level of test anxiety (See Appendix C). The questions were addition, subtraction, and multiplication, with numbers that did not surpass 100 (i.e. 64-50, 20 x 30, etc.).

Cognitive Test Anxiety Scale- (Cassady & Johnson, 2002)

The Cognitive Test Anxiety Scale (CTAS) consists of 27 items that focus on the cognitive aspects of test anxiety (i.e. worry, rumination, doubt, etc., see Appendix D). The original CTAS had 44 items but was shortened to 27 with no substantial change to internal consistency. The focus of the scale is on the tendency to engage in task-irrelevant thinking, the degree to which people compare themselves to others, how often people engage in irrelevant thinking, how often intrusive thoughts occur, and how often important memory cues are forgotten, all before or during an exam. The scale is measured using a four-point scale where each item is ranked from 1-4, with the lowest possible score being 27 and the highest possible score being 108. The test has shown high internal consistency of $\alpha = .91$ and a test-rest reliability of 88–.94 (Cassady & Johnson, 2002; Furlan, Cassady, & Perez, 2009). In the present study, the text had a reliability score of $\alpha = .942$, demonstrating its high level of reliability.

MSCEIT –Mayer-Salovey-Caruso Emotional Intelligence Test (Mayer, Salovey, & Caruso, 2003)

This 141-item test measures ability emotional intelligence and tests a person's skill in solving emotionally based problems (see Appendix E). The test provides a total EI score and two Area scores: Experiential EI and Strategic EI. Experiential EI is based on a person's ability to identify emotions and apply them actively in thinking. Strategic EI is based on a person's ability to consciously process their emotions and to manage their emotions across different social settings. From there, it is divided into four branch scores and 15 main scores: Emotion Perception (Faces and Pictures) and Emotion Facilitation of Thought (Facilitation and Sensations) as part of Experiential EI, with Emotional Understanding (Changes and Blends), and Emotional Management (Emotion Management and Emotional Relations) as part of Strategic EI. The MSCEIT tests emotional reasoning and problem solving through objective questions and real life scenarios of potential problems. The test has been found to have a high level of reliability, with Cronbach's alpha of alpha at $\alpha = .91$ and test-rest reliability of $r = .86$ found by Brackett and Mayer (2003) (Schutte & Malouff, 2012; Mayer, Salovey, & Caruso, 2012).

Demographic Information Survey

A survey was distributed electronically asking a series of demographic information including, age, year in university, gender, ethnicity, and time spent studying (see Appendix F). Ethnic categories were based off of the 2016 census demographics of Toronto ("Visible Minority and Population Group").

Extra Credit Form

There was a sheet that provided columns for the name of each person who participated in the study to indicate the class in which they would like the extra credit (see Appendix G).

Procedures

The research study was approved by the Tyndale Research Ethics Board before beginning. The experimental part of the study was done in collaboration with Nathan Koropatwa, a fellow honours thesis student, and additional emotional intelligence scales were added to this experiment to complete his study. Participants were recruited through word of mouth from the researchers and posting information on how to participate through social media. There were also posters depicting the title of the experiment, with the researchers' emails, names, and some sentences briefly stating the study's information and how to participate (see Appendix H). The compensation of class credit from 1% per hour of participation (to a maximum of 2%) was offered to students toward any Fall semester psychology class. A pilot study was done with three participants beforehand to examine the best way to administer procedures, and if there were any areas that could be improved upon in efficiency or clarity. The experiment dates ran from October 29th to November 15th. Students came into the computer lab in room CH 227 and were told to fill out a consent form and then complete a few surveys. For the first half of the data collection period, no attempt was made to assign people to condition by GPA category, so participants were randomly given paper copy packages containing the consent form with the prime or the consent form with the control. For the second half of the data collection period, after about 30 participants, the participants were first given the consent form which was handed back to the researcher, who then matched the participant into their experimental condition based on their GPA to ensure an equal amount of GPA categories were represented in each condition. After they filled out the consent form, they were asked to fill out the prime and control questions. Then they were given a copy of the minute math questions and were instructed to complete as many as possible within a minute. After this, the participants were given a paper copy of the

CTA inventory. When that was completed, they moved to the online portion, and were asked to complete the MSCEIT. Finally, participants moved onto the survey monkey portion, where participants completed the Personal Implicit Theories of Emotional Intelligence, the Brief Resilience Scale, and then the Demographic Information Survey. The procedure typically took an hour and a half to complete. The participants were then offered a piece of candy to take with them after they finished and received a debriefing via email in late April, once data had been analyzed.

Results

There were 37 participants in the prime condition and 34 participants in the control condition. Overall, both conditions were almost evenly matched in their GPA categories. See Table 1 for a description of the number of participants in each condition per GPA category.

GPA Category	0-2.69 (0-69%)	2.7-3.29 (70-79%)	3.3-3.69 (80-84%)	3.7-4.0 (85-100%)
Prime Participants	3	10	12	8
Control Participants	3	11	11	8

Table 1: Number of Participants in Each Condition per GPA Category

To test the predictions that the prime would increase scores on the MSCEIT and the CTA scale, a series of independent samples t-tests were carried out separately for each MSCEIT sub score as well as the CTA scores. The average Perceiving Emotions score for the prime condition (M=.54) was not significantly higher than the control (M=.53), t(69)= .08, $p > .05$. Thus, the prime did not lead to a higher Perceiving Emotions score. The average Using Emotions score for the prime condition (M= .46) was significantly lower than the control (M=.49), t(69)= -2.40,

p<.05. Thus, the prime did not lead to a higher Using Emotions score, but had a significantly lower score than the control group. The average Understanding Emotions score for the prime condition (M= .52) was not significantly higher than the control (M=.54), t(69)= -1.04, *p*> .05. Thus, the prime did not lead to a higher Understanding Emotions score. The average Managing Emotions score for the prime condition (M= .42) was not significantly higher than the control (M=.43), t(69)= -.90, *p*> .05. Thus, the prime did not lead to a higher Managing Emotions score. The average Emotional Experiencing area score for the prime condition (M= .50) was not significantly different than the control (M=.51), t(69)= -1.10, *p*> .05. Thus, the prime did not lead to a higher Emotional Experiencing score. The average Emotional Reasoning score for the prime condition (M= .47) was not significantly different than the control (M=.48), t(69)= -1.19, *p*> .05. Thus, the prime did not lead to a higher Emotional Reasoning score. The average Overall Emotional Intelligence score for the prime condition (M= .48) was not significantly different than the control (M=.50), t(69)= -1.33, *p*> .05. Thus, the prime did not lead to a higher Overall Emotional Intelligence score. The average CTAS total score for the prime condition (M= 70) was not significantly higher than the control (M=68), t(69)= .583, *p*> .05. Thus, the prime did not lead to a lower CTAS total score.

To test the hypothesis that higher CTAS scores would be negatively related to emotional intelligence, a series of Pearson correlations were computed for each MSCEIT sub score. A significant negative correlation was found between CTA and Perceiving Emotions on the MSCEIT, r(n=70)= -.268, *p*<.05. Higher CTAS scores were associated with lower Perceiving Emotion scores. See Figure 2 for a graph of CTAS scores related to Perceiving Emotion scores on the MSCEIT.

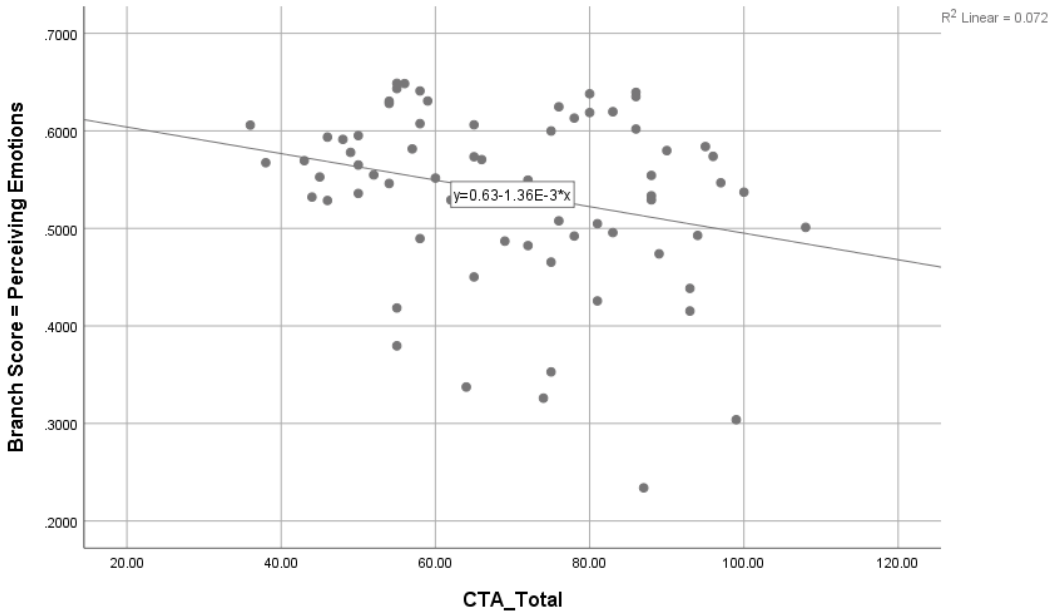

Figure 2: CTAS Scores in Relation to Perceiving Emotion Scores on the MSCEIT

A significant negative correlation was not found between CTAS and Using Emotions on MSCEIT, r(n=70)= -.117, *p*>.05. Higher CTAS scores were not associated with lower Using Emotion scores. A significant negative correlation was not found between CTAS and Understanding Emotions on the MSCEIT, r(n=70)= -.231, *p*>.05. Higher CTAS scores were not associated with lower Understanding Emotion scores. A significant negative correlation was not found between CTAS and Managing Emotions on the MSCEIT, r(n=70)= -.124, *p*>.05. Higher CTAS scores were not associated with lower Managing Emotion scores. A significant negative correlation was not found between CTAS and Emotional Experiencing area on the MSCEIT, r(n=70)= -.124, *p*>.05. Higher CTAS scores were not associated with lower Emotional Experiencing area scores. A significant negative correlation was not found between CTAS and Emotional Reasoning area on the MSCEIT, r(n=70)= -2.21, *p*>.05. Higher CTAS scores were not associated with lower Emotional Reasoning area scores. A significant negative correlation was found between CTAS and Overall Emotional Intelligence on the MSCEIT., r(n=70)= -.266,

p<.05. Higher CTAS scores were associated with lower Overall Emotional Intelligence scores. See Figure 3 for a graph of CTAS scores in relation to Overall Emotional Intelligence Scores on the MSCEIT.

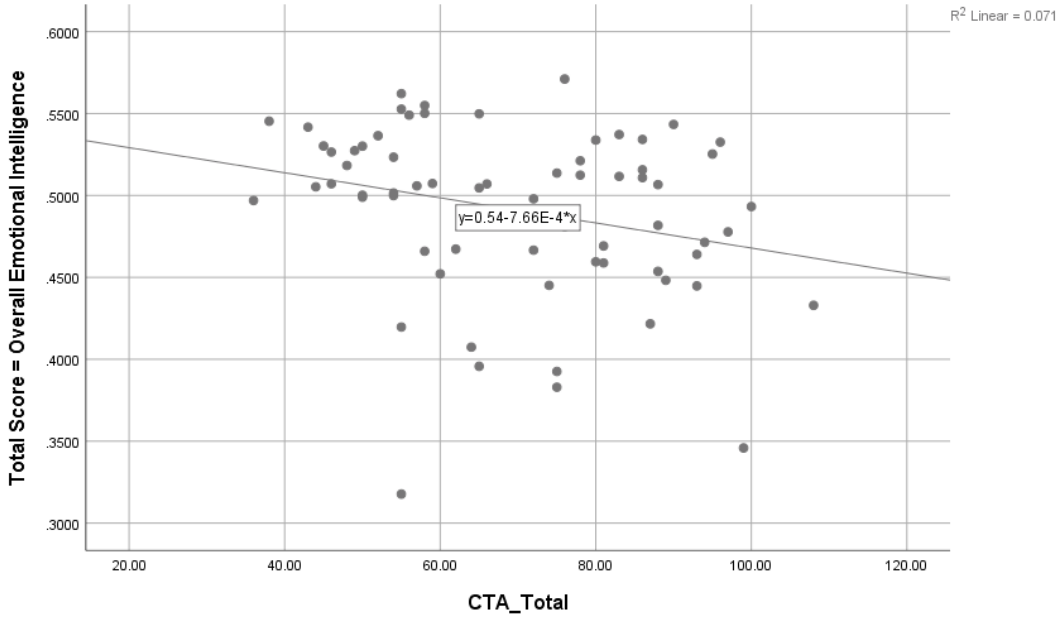

Figure 3: CTAS Scores in Relation to Overall Emotional Intelligence Scores on the MSCEIT

A significant negative correlation was found between CTAS and number of math questions attempted on the minute math sheet, r(n=70)= -.2.94, *p*<.05. Higher CTAS scores were associated with fewer attempts of math questions. See Figure 4 for a graph of CTAS scores in relation to the number of math tests attempted.

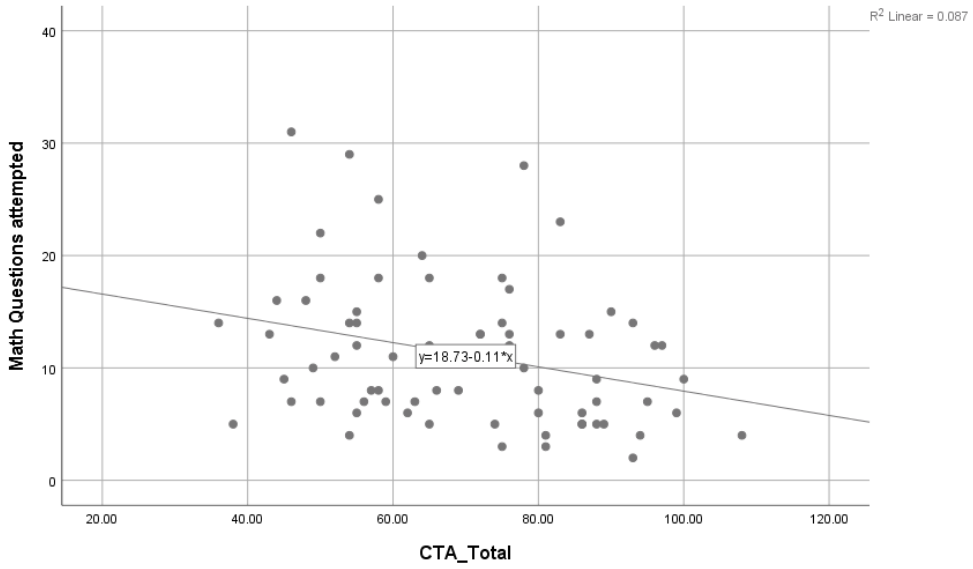

Figure 4: CTAS scores in relation to the number of math tests attempted.

To test the hypothesis that scores on the MSCEIT would vary for women and men, a series of independent samples t-tests were carried out. The average Perceiving Emotions score for women (M= .54) was not significantly higher than the average score for men (M=.53), t(68)= -.18, p> .05. Thus, women did not have a higher Perceiving Emotions score than men. The average Using Emotions score for women (M= .48) was not significantly higher than the average score for men (M=.47), t(68)= -.36, p> .05. Thus, women did not have a higher Using Emotions score than men. The average Understanding Emotions score for women (M= .53) was not significantly higher than the average score for men (M=.51), t(68)= -.95, p> .05. Thus, women did not have a higher Understanding Emotions score than men. The average Managing Emotions score for women (M= .43) was not significantly higher than the average score for men (M=.40), t(68)= -1.98, p> .05. Thus, women did not have a higher Managing Emotions score then men. The average Emotional Experiencing area score for women (M= .50) was not significantly higher than the average score for men (M=.50), t(68)= -.30, p> .05. Thus, women did not have a higher Emotional Experiencing score. The average Emotional Reasoning score for women (M=

.48) was not significantly higher than the average score for men (M=.45), t(68)= -1.74, $p > .05$. Thus, women did not have a higher Emotional Reasoning score. The average Overall Emotional Intelligence score for women (M= .49) was not significantly higher than the average score for men (M=.48), t(68)= -1.05, $p > .05$. Thus, women did not have a higher Overall Emotional Intelligence score than men.

An independent samples t-test was also carried out to test the hypothesis that the CTAS total score would be higher for women than men. The average CTAS total score for women (M= 71) was not significantly higher than the average score for men (M=61), t(68)= -1.67, $p > .05$. Thus, women did not have a higher CTAS total score than men.

To explore the influence of GPA category on emotional intelligence and CTA scores, a series of ANOVAs were carried out. These ANOVAs excluded the lowest GPA category, since it contained so few people (N= 6). GPA was not related to Perceiving Emotion scores on the MSCEIT $F(2, 57)= 2.897$, $p>.05$. GPA was related to Using Emotion scores on the MSCEIT $F(2, 57)= 4.219$, $p<.05$. See Figure 2 for a graph of the mean Using Emotion scores for each GPA category.

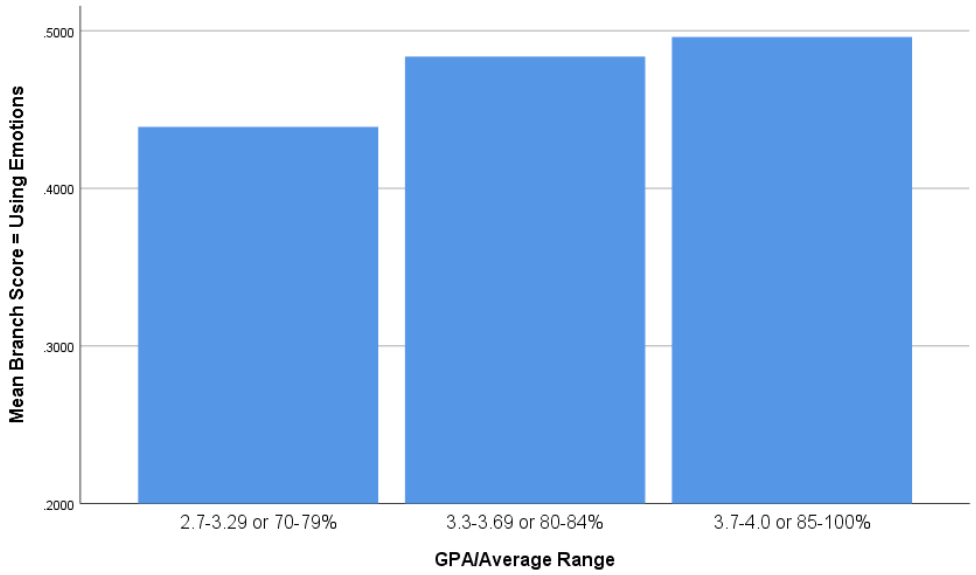

Figure 5: Mean Using Emotion Scores for Each GPA Category

GPA was related to Understanding Emotion scores on the MSCEIT, $F(2, 57)= 5.322$, $p<.01$. See Figure 3 for a graph of the mean Understanding Emotion scores for each GPA category.

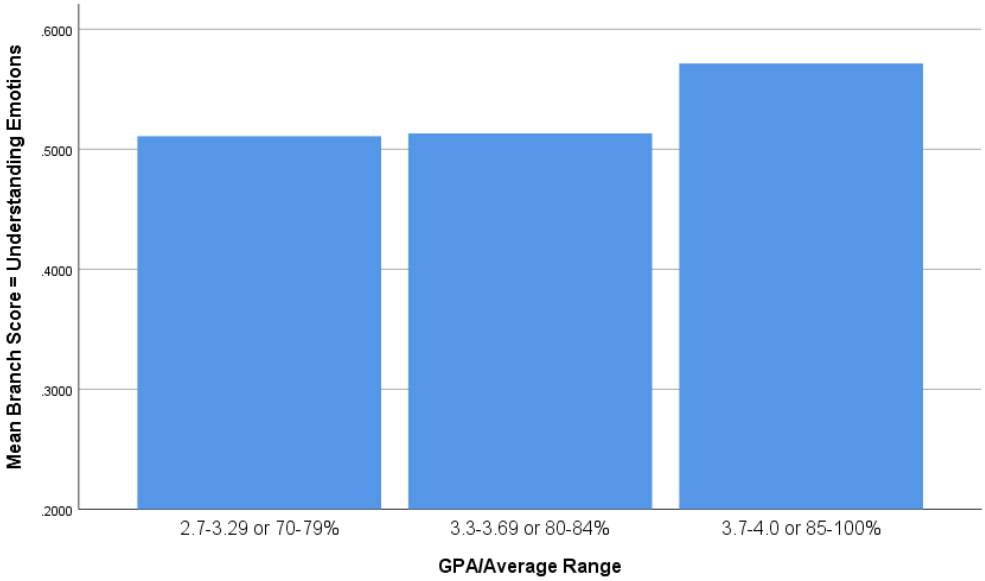

Figure 6: Mean Understanding Emotion Scores for Each GPA Category

GPA was related to Managing Emotion scores on the MSCEIT, F(2, 57)= 3.385, $p<.05$. See Figure 4 for a graph of the mean Managing Emotion scores for each GPA category.

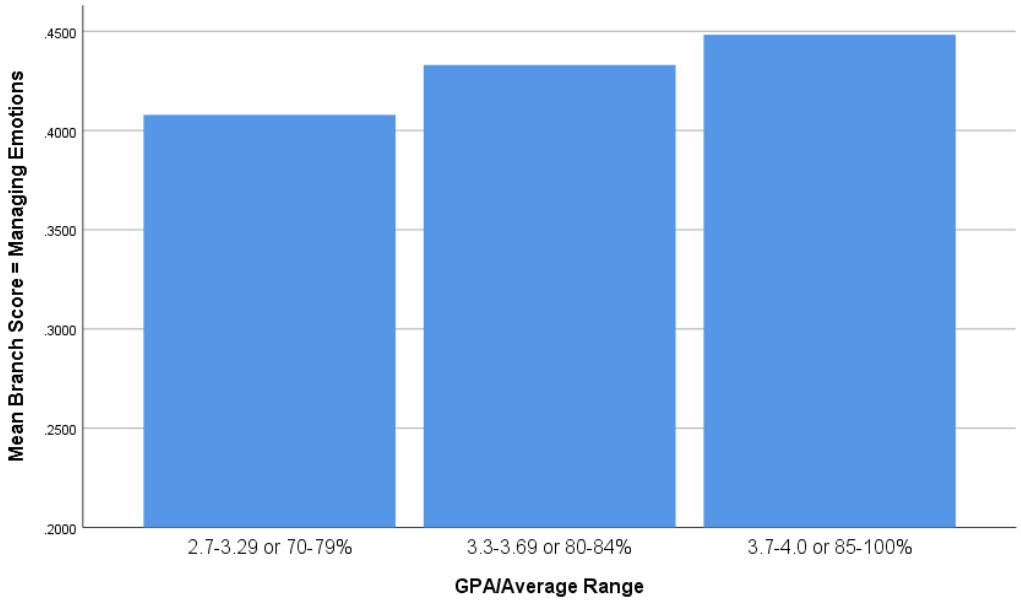

Figure 7: Mean Managing Emotion Scores for Each GPA category

GPA was related to Emotional Experiencing scores on the MSCEIT, F(2, 57)= 4.720, $p<.05$. See Figure 5 for a graph of the mean Emotional Experiencing scores for each GPA category.

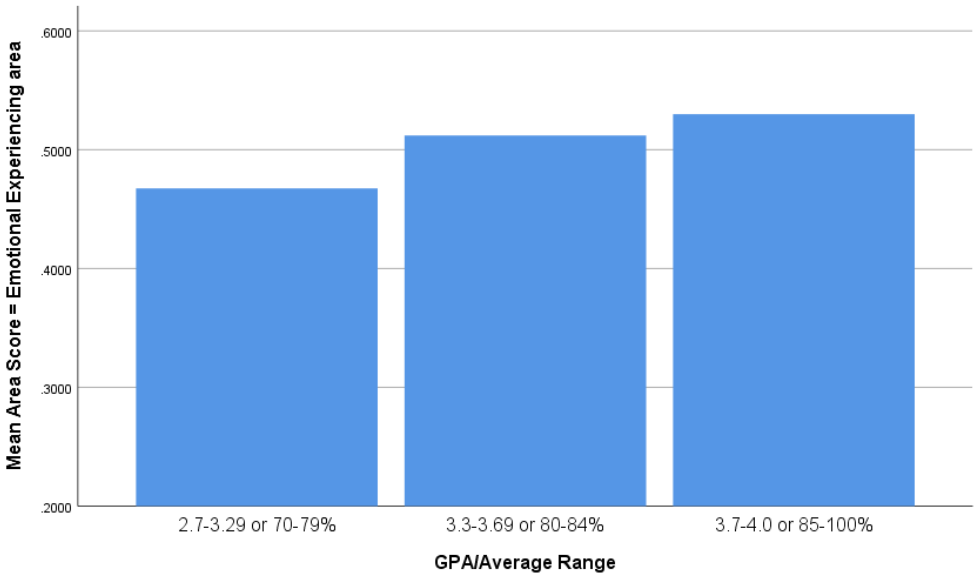

Figure 8: Mean Emotional Experiencing scores for each GPA category.

GPA was related to Emotional Reasoning scores on the MSCEIT, $F(2, 57)= 6.230$, $p<.01$. See Figure 6 for a graph of the mean Emotional Reasoning scores for each GPA category.

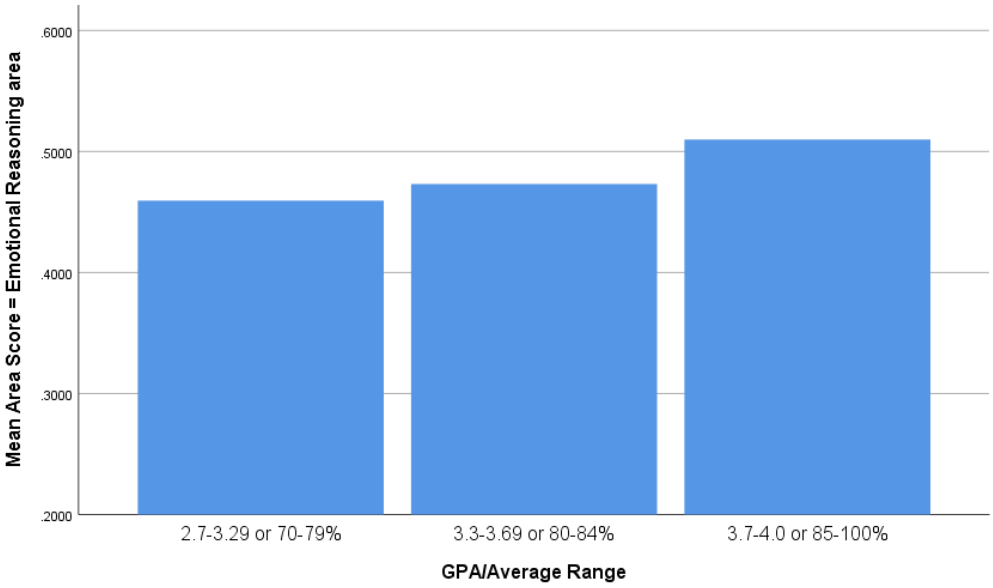

Figure 9: Mean Emotional Reasoning scores for each GPA category.

GPA was related to Overall Emotional Intelligence scores on the MSCEIT, F(2, 57)= 6.303, $p<.01$. See Figure 7 for a graph of the mean Overall Emotional Intelligence scores for each GPA category.

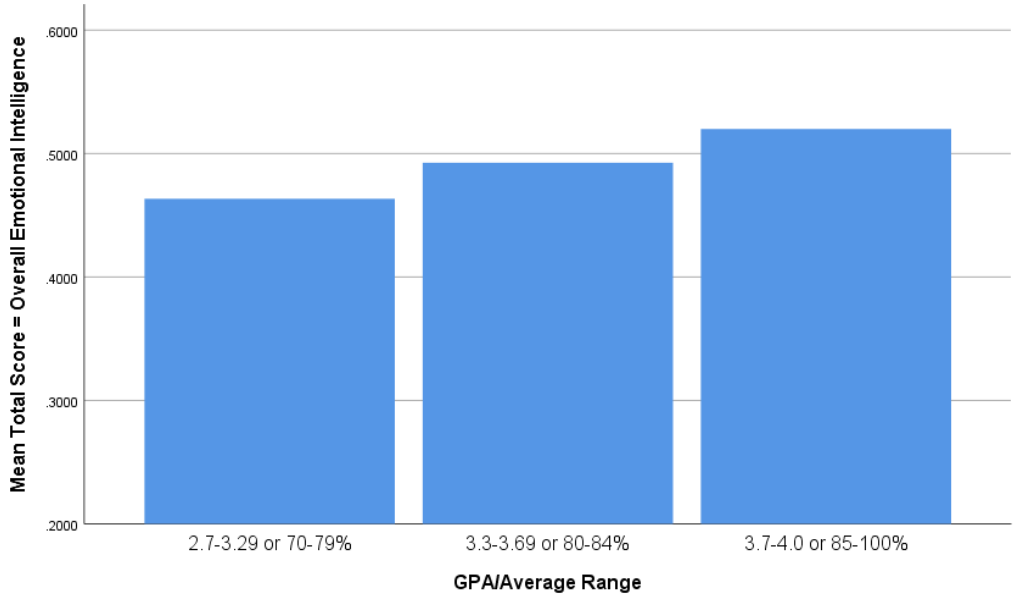

Figure 10: Mean Overall Emotional Intelligence Scores for each GPA category

GPA was found to not be related to CTAS scores, F(2, 57)= .620, $p>.05$.

Discussion

The hypotheses surrounding the prime were not found to be significant in this study. The prime did not significantly affect the answers to the MSCEIT or the CTAS for any GPA category. In fact, in the Using Emotions aspect of the MSCEIT, the control group scored significantly higher. There are a variety of potential explanations for this. One possible explanation would be that the prime was administered too far away from the outcome measures, since it was administered near the beginning of the experiment with substantial time between the prime and the administration of the MSCEIT. When the prime and control questions were administered, the control questions did not require as much in depth thinking as the prime

questions did, and so participants who finished the control often finished faster than those who completed the prime. Only after the last person had finished the prime/control questions could the group move on to the next section of the timed minute math section, leaving those who finished early waiting longer for the next section. The minute math test and the administration of the CTAS also led to this larger gap between the administration of the prime and the MSCEIT, possibly interfering with the intended effects of the prime and making it ineffective. In the Schutte and Malouff (2012) studies, they completed the MSCEIT immediately after the prime, which could have had a significant difference in the effectiveness of the prime in that study. Also, the participants in the Schutte and Malouff (2012) study were only given five to 10 minutes to complete the prime, whereas the participants in this study generally took anywhere between five and 20 minutes to complete the prime, which could have interfered with the effectiveness of the prime as well.

Furthermore, the content of the minute math test and the CTAS could have interfered with the prime, as the anxiety induced in the minute math test and the focus on anxiety with the CTAS could have rendered the intended effects of the prime ineffective. There are currently few studies that examine the relationship between priming and anxiety. Dalgleish, Cameron, Power, and Bond (1995) examined the relationship between emotional priming of self-esteem and anxiety. They primed clinically anxious patients with emotionally negative or positive words and asked them to respond to whether or not a statement applied to them as fast as they possibly could. They found that participants who were anxious and who experienced the negative prime tended to respond faster to the negative adjectives, which was the opposite of a normal population. For a non-anxious population, when presented with negative adjectives they tended to respond more slowly, possibly as a means of self-managing emotions. They concluded there

was a "processing bias in favour of negative stimuli in anxious subjects" (p. 86). Although this conclusion was for participants with a clinical diagnosis of Generalized Anxiety Disorder, the math test and the questions on the CTAS could have worked as a possible counter prime for the MSCEIT test, and mitigated positive effects of the emotional intelligence prime. This may have been especially true for those with higher test anxiety, as perhaps they could have more easily identified as being test-anxious or poor at taking tests over their self-concept of being emotionally intelligent, which could have interfered with the prime. More research needs to be done to examine the relationship between anxiety and the effect it can have on a prime.

Another possibility is that the math test and the CTAS interfered with the active self-concept intended to be stimulated by the prime. According to the Active Self-Account theory, the active self concept revolves around how a person's self-concept is influenced by their current situation, in that a person's view of themselves is to an extent influenced by what is going on around them (Schutte & Malouff, 2012). However, the CTAS asked questions that pertained to how people typically act for tests, and the typical levels of anxiety they face, which may have instead drawn upon the static self-concept, which is a person's understanding of self according to what has been consistent in his or her life (Wheeler et al., 2007). So if a person has been consistently anxious, this could have interfered with the primed concept of emotional intelligence and instead drawn upon their static-self concept of being test anxious. As well, the focus on test anxiety could have interfered with the self-perception pathway in another way, by instead becoming the focus of the active-self concept, minimizing the self-perception of EI in a person's self-concept and mitigating the intended effects of the EI prime.

The effectiveness of the prime could also have been affected by whether or not a person is naturally susceptible to primes. Wheeler et al. (2007) mentioned that something that could

mitigate the effectiveness of a prime would be if a person was a low or high self-monitor. Self-monitoring is described as the "tendency and ability of individuals to modify their self-presentations in response to situational demands" (p. 244). A low self-monitor is someone who is consistent in their self-perception and their beliefs, and does not change their behaviour easily according to their situation. A high self-monitor, however, changes behaviour frequently in order to adapt to their current situation. High self-monitors are typically less susceptible to the effects of a prime, and so if there were more people who were high self-monitors in the experiment, perhaps they would not have been as affected by the prime. In the Schutte & Malouff (2012) study, they did not examine high or low self-monitors, and so it was not included in this study, but it would be interesting to see the potential affects it could have on the EI prime.

A possibility to consider as well is how other prime to behaviour pathways could have interfered with the EI prime in this study. The several proposed pathways in the beginning could have affected the outcome of the prime. One possibility is that the prime could have activated the goal behaviour of emotional intelligence, but not necessarily emotionally intelligent behaviour. This fits within Wheeler and DeMarre's (2009) paradigm that activation of a goal behaviour does not necessarily mean it will directly enact behaviour, as there could be different possibilities to reach a goal. So the goal behaviour of emotional intelligence could have been primed without successful emotionally intelligent behaviour, which could explain why the prime did not work as intended. The perceptions of others pathway could have also been activated, as this study was taken in groups with other people; if people took the prime, but later were focused on others consciously or subconsciously as they realized they were holding up the group from moving on, the effectiveness of the prime could have been mitigated. The prime itself could have also influenced the activation of the self schema, as some of the questions designed by Schutte and

Malouff (2012) were designed to ask about emotional responses of others. Perhaps those in the prime were influenced less by their self perception of their own emotional intelligence, but were more focused on how they perceived and influenced others, and their perceptions of others then affected the effectiveness of the prime. In DeMarree and Loersch's (2009) first study, those who were primed and then thought about their best friend were not significantly affected by the prime later in behaviour, because the task had to do with the self and not another unaffected party. This possible change from self-schema to the perception of others could have then been interfered by the CTAS, which was directed toward the self-schema. Overall, there could have been other interventions from a person's perception of the prime that influenced their behaviour, as perceptions of others, self, and situations can all interact to varying degrees to affect the prime to behaviour mechanism (Wheeler & DeMarree, 2009).

Another important aspect to consider is that the average age difference for this experiment was 22 years old, whereas for Schutte & Malouff's (2012) experiment the average age for both studies was almost 10 years older, with Study One being about 35 years old and Study Two about 32 years old This age gap could also possibly explain the discrepancies between the effectiveness of the prime between studies, and could be a possible point of examination for the future. Age also could be a significant mediating factor in the relationship between emotional intelligence and gender. There was a study done by Fernández-Berrocal, Cabello, Castillo, and Extremera (2012) that examined whether or not there was a significant difference between men and women's EI scores. They found that when they controlled for age, EI scores were not significantly different. So there is a possibility that age could also have mediating affects on primes of emotional intelligence, as perhaps older people are more emotionally intelligent or more susceptible to seeing themselves as emotionally intelligent.

Another study by Canter, Youngs, and Yaneva (2017) found that on the self-report kindness scale they had developed, older people scored higher on kindness than younger people. Although kindness is not emotional intelligence, the elements of the scale involved tolerance, empathy, and kind actions, which are very similar to aspects of EI (e.g., emotional understanding, management, etc.). This could also potentially support that increased age does have a positive effect on EI or EI self-perceptions.

Cognitive test anxiety had a significant negative relationship with overall emotional intelligence, which confirms what has often been found in the literature (Ahmadpanah et al., 2016; Abdollahi, & Abu Talib, 2015; Thomas, et al., 2017). It is curious that only the Perceiving Emotions score was found to be significantly negatively related to CTA but no other sub score was related, not even the managing emotions aspect of emotional intelligence, which seems to conflict with the literature (Ahmadpanah et al. 2016). This could be due to the fact that that in Ahmadpanah's study, EI was measured using a trait scale; thus, there could be other factors that mediate the relationship between test anxiety and the managing emotions aspect of emotional intelligence. In MacCann et al.'s (2011) study, coping strategies were found to mediate the relationship between EI and academic achievement, with problem-focused coping mediating the strongest positive relationship between EI and academic achievement. The emotional management branches of EI were most strongly linked with coping strategies. Perhaps coping strategies could mediate the relationship between EI and test anxiety as well. The negative relationship between Perceiving Emotions and CTA could possibly be explained by the fact that perceiving emotions may be tied to recognition of stress. Gohm, Grant, and David (2005) hypothesized that those with higher emotional perception may be better at recognizing stressors and stress in their own life, which may make it easier for them to choose an effective coping

strategy. Although they found no significant results in their study, it could explain the relationship present in the current study.

A negative relationship was found between the number of math questions participants completed and their test anxiety scores, which confirms the hypothesis that CTA is related to how a student will answer questions on a test. This is consistent with the *cognitive interference model* which suggests that racing thoughts interfere with a person's ability to take a test (Cassady & Johnson, 2002). This is also consistent with results found by Ashkenazi (2018) who studied mathematical anxiety and priming. Ashkenazi found that participants with higher levels of math anxiety, when given a mathematical prime, demonstrated a higher level of processing of information that was irrelevant and non-numerical. Thus, in the present study, although the implied cause and effect relationship between CTA and number of minute math questions answered is not clearly established, it is a reasonable potential explanation of the relationship.

There were also no significant differences between men and women in emotional intelligence, which was not generally consistent with the literature, as women typically do better than men on the MSCEIT (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006; Fernández-Berrocal et al., 2012). However, even though there was not a significant difference, the trend was for women to score slightly higher in every area of the MSCEIT. There was also a very unbalanced amount of men and women in the study with 59 females and 11males. If the study was more balanced and controlled for age, this trend might have been significant. A larger sample size could have led to significant differences as well. However, Fernández-Berrocal et al. (2012) found that men and women had no discernible difference in emotional intelligence when age was controlled for, so although these results contradict a widely held consensus, due to the similar ages of those in each category, it could reflect that men and women did not show a

significant difference in their emotional intelligence due to the age being relatively close together for all participants.

Men and women did not have a significant difference in test anxiety, which is different from the literature because typically women report significantly higher test anxiety, although not necessarily lower levels of academic performance (Núñez-Peña, Suárez-Pellicioni, & Bono, 2016; Mwamwenda, 1994). The trend in this study was for women to have higher levels of reported anxiety, so while it was not significant, it was in the expected direction. This could be due, once again, to the different sample sizes of females and males, with 59 females and 11 males; if there was a more even balance of males and females, the results could have been different.

Comparisons of emotional intelligence scores by GPA category followed the pattern that is typically seen in literature, with higher GPA categories being associated with higher levels of emotional intelligence (Thomas et al., 2017; MacCann et al., 2011). The only category that was not found to be significantly related to GPA was Perceiving Emotions, which has been shown to have a weaker correlation with GPA in the literature as well (MacCann et al., 2011).

Limitations

This study had several limitations, one of the largest was the number of participants available. Due to the small size of the school, participants were already from a small population, but due to the funding available for research only 70 MSCEIT tests were available for purchase, limiting the potential size of the population even further. This expense of the MSCEIT led to a combined experiment with fellow thesis student Nathan Koropatwa. It was also not a totally random sample, but a sample of participants mostly from psychology courses in order to provide extra credit, limiting the population further.

It would have been helpful if there had been a prime and control condition where no minute math test or CTAS was administered, to see the possible affect they had on the MSCEIT. However, due to the limited amount of MSCEIT tests that could be purchased and administrated (71), there was no way to measure the possible affects that the minute math test or the CTAS had on either condition; the sample size groups would have been too small with 71 people divided into four conditions (prime with CTAS and math test, prime without the tests, control with CTAS and math test, and control without the tests).

Another limitation pertains to the physical space used to carry out the experiment. Due to the fact that MSCEIT was only administered through online means, a computer lab had to be used for the experiment. The computer lab could only seat seven people at a time, during a limited amount of times per week, due to the fact that the lab was in high demand. This created more opportunities to increase the amount of variables affecting participants, as each week the test took place at different time, with different researchers supervising the testing periods. The sample was also limited to people who could participate at those designated times. The environment around the lab was also occasionally noisy, although it was mostly quiet. However, in one session, those in the adjacent room were loud enough that it disturbed the participants and they had to be asked to quiet down. In this instance, the limitations of the physical environment could have influenced the experiment.

The use of the minute math test, as opposed to a real course exam, is another potential limitation. Originally it had been proposed to administer the test before an exam of some sort, to capture the stakes and feelings behind an important test that would cause deeper levels of anxiety. Due to time and space restraints with the MSCEIT, however, only the minute math test could be included to stimulate a lower level of anxiety.

To have an accurate measure, the minute math test had to be taken and timed at the same time for all participants, meaning there was a larger gap between finishing the control/prime and the beginning of the test for some participants. This led to differences in waiting times for each participant between the tests and could have affected the results, as the time between the prime and the next section of the experiment varied for each participant.

The measurement of test anxiety itself may have been another limitation, as the most readily available and reliable measure was the CTAS, but it measured test anxiety that did not measure how people felt cognitively in the immediate situation, but how they felt in general about test anxiety. Perhaps a cognitive based test anxiety test that would measure immediate sensations of test anxiety would have better suited this study. Also, there is a revised version of the CTAS by Cassady & Finch (2015) called the Cognitive Test Anxiety Scale Revised with a reliability level of $\alpha = .96$, which had some reverse coded question removed, but the CTAS was more readily available and proved to be extremely reliable as well, so it was used for this study. However, the revised scale could have proved more sensitive or more reliable for the current study if it was used.

There was also a limitation in that the data for how long they typically studied ended up not being analyzed, as there was difficulty in translating that data to SPSS.. It would have been interesting to examine the possible relationships with study times, CTA and EI, and could be something to examine in a future study.

One final limitation was that participants knew the study was about emotional intelligence and test anxiety before they arrived, as the study needed to be advertised as such so that people would know what was happening in the study and they would be intrigued to come. This could have influenced their perception of the study and their expectations, which could have

influenced a prime to behaviour mechanism and therefore interfered with the intended effects of the prime.

Future Areas of Research

Further research could better clarify the relationships between these variables by analyzing the relationship between anxiety and priming, as anxiety could have influenced the strength of the prime in this study. This could increase our understanding of the ways in which anxiety moderates the effects of priming and may help us better understand how to use primes in high anxiety contexts.

Further research could also be done in examining the length of a prime's effectiveness. This could help our understanding of a prime's functionality, and demonstrate under what circumstances a prime's effectiveness increases or decreases that will allow us to better utilize primes in the future.

Another possible area of research is examining the effect of primed emotional intelligence questions before a real exam. When the test conditions are closer to a real life experience that typically induces cognitive test anxiety, it would be interesting to see if the prime would have any effect on EI or cognitive test anxiety in this context. This could demonstrate the effectiveness and practicality of having EI primes in test anxious settings.

Examining the effect that age has on EI and on primes could also be another area of research in the future. This could help our understanding of what potential prime to behaviour mechanisms could be more effective or easier pathways to travel for older or younger people. It could also broaden our understanding of how EI changes over time, and the potential differences in EI that occur in certain stages of life.

There could also be more research done into how different pathways of primes might affect each other in social contexts, and what factors influence the shifts between the static self-schema and the active-self schema. This could further our understanding of when certain prime to behaviour mechanisms operate, and in what circumstances the static-self schema can influence the active self-schema.

More research could also be done on how self-monitoring interacts with EI, to determine if low self-monitors or if high self-monitors have higher or lower emotional intelligence based on their ability to fit into a social circumstance. This could help us understand how effective emotional intelligence primes could be on certain people, and if certain types of social interaction reflect higher levels of EI.

Another interesting area to consider is that women tend to score higher in EI and in test anxiety, yet there is a typical negative relationship between them. Examining potential mediators for this relationship, such as coping strategies, could broaden our understanding of how test anxiety interacts with gender, and what elements make up for this seeming discrepancy.

The possible development of a test anxiety scale that measures immediate anxiety could also be a potential area for future research. Finding an immediate way of assessing and measuring how much anxiety a person feels during a test could get a more accurate measurement and understanding of test anxiety, as well as providing a possible outlet for those with test anxiety and providing a chance for self-reflection.

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Appendix A

Informed Consent Form

PROJECT TITLE: The Relationships Between Emotional Intelligence, Thinking, Test Anxiety, Growth, and Resilience

PRINCIPAL RESEARCHERS: Deanna Elder, Psychology Student at Tyndale University College & Seminary, 3377 Bayview Avenue, Toronto, ON. Email at deanna.elder@mytyndale.ca

Nathan Koropatwa, Psychology Student at Tyndale University College & Seminary, 3377 Bayview Avenue, Toronto, ON. Email at nathank091@hotmail.com

SUPERVISOR: Dr. Nancy Ross, Psychology professor at Tyndale University College & Seminary, 3377 Bayview Avenue, Toronto, ON. Phone: 416-226-6620 ext.2708. Email at nross@tyndale.ca

This study has been approved by the Tyndale Research Ethics Board (REB). For any questions or concerns you may have about participation rights you may contact Dr. Ross the project supervisor at nross@tyndale.ca. If you have any questions about the study you may email either one of the principal researchers, Deanna at Deanna.elder@mytyndale.ca or Nathan at Nathan.Koropatwa@mytyndale.ca.

THE PURPOSE OF THE RESEARCH: This research is being conducted for two Honours Theses, one for Deanna Elder and one for Nathan Koropatwa. The purpose of this study is to examine the relationships between emotional intelligence, thought process, test anxiety, growth mindset, and resilience

WHAT THE STUDY ENTAILS: You have the choice of participating in this study. If you choose to do so, you will be asked to fill out a survey, a quick math test, a test anxiety scale, an

emotional intelligence measure (the Mayer-Salovey-Caruso Emotional Intelligence Test: MSCEIT), a growth mindset scale, a resilience scale, and one demographic survey. The estimated time to complete the entire package is one and a half hours. You will have up to two hours to complete the study. There will be a MSCEIT authorized professional present to ensure the experiment was conducted in standardized way. A MSCEIT authorized professional is a person who holds a graduate degree in psychology, who will be Dr. Nancy Ross for the duration of the experiment.

RISKS: There is small risk associated with this study. You may feel psychological or social discomfort answering some questions. If you feel uncomfortable answering any of the questions you may stop and there will be no consequences. You may also feel eye strain or uncomfortable with sitting at the computer for the duration of the study. However, if you feel uncomfortable with this risk, you may choose to not agree to that part of the study and/or drop out of the study altogether with no consequences. There is a risk involved of the researchers being able to identify your GPA range with your identity, but if it is known there will be the strictest confidence in not sharing the details. You will be given a subject number to codify all data and any information relating any personal information to the subject number (i.e. your signature) will be kept in the strictest confidence and will not be revealed to anyone outside of the researchers. The data from the MSCEIT test will be analyzed by their organization and the results will be sent back to the researchers to analyze as well. The MSCEIT organization is a professionally based company that will keep all information in the strictest confidence and will have no access to any of your personal information as all tests will be coded so they will have no way of knowing your identity. You waive no legal rights and owe nothing to the MSCEIT organization upon participation in this study. All other information will be held in the strictest

confidence. If you feel distressed due to the experiment and would like professional counselling, counselling services are on the B500 wing at Tyndale University or you may go to https://www.tyndale.ca/counselling to book a counselling session.

BENEFITS: By partaking in this study, you will help in furthering the research on how different aspects of emotional intelligence, test anxiety, growth mindset, and resilience interact with each other, which is an area that is currently being developed and explored.

VOLUNTARY NATURE OF PARTICIPATION: Participation in this study is completely voluntary. You may cease to participate in the study at any time and it will not affect your relationship with your academic institution or the researcher in any way at all. You do not waive any legal rights in participating in this study.

WITHDRAWAL: You may choose to withdraw from the study at any moment of time and there will be no consequences in the relationship between you and the researcher, with Tyndale University College and Seminary, or with any other group associated with the study. If you choose to withdraw, all information gathered will be destroyed as soon as possible.

CONFIDENTIALITY: The information given will be held in the strictest confidence by the researcher. The MSCEIT authorized professional, Dr. Ross, for the duration of the experiment will only be present in the room and will not interact with you for any part of the experiment. The demographic information will be general to avoid recognition of persons. The student numbers will not be associated with any data. All data will be encoded and will be ensured the greatest level of confidentiality. All published data will not be individually available but will be published as part of a different group score. The data will be kept in locked filing cabinets and will be digitalized on password encrypted files that will be destroyed after five years.

INCENTIVES: If you choose to partake in this study, you will be compensated with extra credit. Extra credit given will be 1% per hour participated in the study, applicable only to classes in which the professor has seen fit to accept the extra credit of this study. There may also be snacks available for consumption after completion of the study. Please see the researchers at the end of study to write down the class you would like to receive the credits in and your student number

QUESTIONS: If you have any further questions about the study or your participation, please contact the principal researchers, Deanna Elder or Nathan Koropatwa by email: deanna.elder@mytyndale.ca, Nathan.Koropatwa@mytyndale.ca

PLEASE CIRCLE YOUR GPA/AVERAGE RANGE:

0-2.69 or (0-69%)

2.7-3.29 or (70-79%)

3.3-3.69 or (80-84%)

3.7-4.0 or (85-100%)

SIGNATURES

I, , consent to participate in two studies, one on conducted by Deanna Elder, and one conducted by Nathan Koropatwa that will be combined into one experiment. I know the risks and benefits involved and I accept them. I understand the nature of the study, what it entails, and I wish to participate in it. I understand that my information will be kept totally confidential. My signature ensures my consent to this study. If I do not participate, I understand that there will be no penalties for me doing so.

Signature of participant: Date:

Signature of principal researcher: Date:

Signature of principal researcher: Date:

Appendix B

Emotional Intelligence Prime Questions- A

1. Think of a time during the past several days when you were aware of what emotion you were experiencing. What was the emotion and how did you recognize the emotion?
2. Think of a time during the past several days when you were aware of what emotion another person was experiencing. What was the emotion and how did you recognize the emotion?
3. Think of a time during the past several days when you understood the cause of an emotion you were experiencing. What was the emotion and what was the cause?
4. Think of a time during the past several days when you understood the cause of an emotion another person was experiencing. What was the emotion and what was the cause?
5. Think of a time during the past several days when you successfully used an emotion to help you think more effectively (for example in solving a problem). What was the emotion and how did you use the emotion?
6. Think of a time during the past several days when you successfully managed (regulated) your own emotion. What was the emotion and how did you manage it?
7. Think of a time during the past several days when you successfully managed (regulated) another person's emotion. What was the emotion and how did you manage it?

Emotional Intelligence Prime Questions- B

1. What you did between the time you woke up and mid-morning?
2. What you did between mid-morning and lunch time?
3. What did you did between lunch time and mid-afternoon?
4. What did you do between mid afternoon and dinner time?
5. What did you do between dinner and the evening?
6. What did you do between the evening and night time?
7. What did you do from the rest of the night until you went to sleep?

Appendix C

Minute Math Test

WEB MATH MINUTE

SUBJECT NUMBER _____

SCORE _____

50 - 15	43 x 1	34 x 44	16 - 3	7 x 47	43 - 14	23 - 16	18 + 7	50 - 43	6 + 2
8 + 17	32 + 10	25 + 44	46 - 21	43 - 3	27 + 17	44 - 39	20 - 6	35 - 6	13 - 12
25 x 19	37 + 50	49 x 25	5 x 46	26 x 38	44 + 15	4 x 9	29 + 28	11 + 13	35 - 25
11 x 50	4 x 36	6 + 35	2 + 39	43 x 15	36 + 8	46 - 12	44 x 40	48 + 1	7 x 36
47 - 27	50 - 16	4 + 6	16 x 7	24 + 49	19 + 35	31 - 29	48 + 24	45 + 21	4 + 28

Appendix D

Cognitive Test Anxiety Scale

A=Not at all typical of me
B=Only somewhat typical of me
C= Quite typical of me
D=Very typical of me

1. I lose sleep over worrying about examinations.

2. While taking an important examination, I find myself wondering whether the other students are doing better than I am.

3. I have less difficulty than the average college student in getting test instructions straight.*

4. I tend to freeze upon things like intelligence tests and final exams.

5. I am less nervous about tests than the average college student.*

6. During tests, I find myself thinking of the consequences of failing.

7. At the beginning of a test, I am so nervous that I often can't think straight.

8. The prospect of taking a test in one of my courses would not cause me to worry.*

9. I am calmer in test situations than the average college student.*

10. I have less difficulty than the average college student in learning assigned chapters in textbooks.*

11. My mind goes blank when I am pressured for an answer on a test.

12. During tests, the thought frequently occurs to me that I may not be too bright.

13. I do well in speed tests in which there are time limits.*

14. During a course examination, I get so nervous that I forget facts I really know.

15. After taking a test, I feel I could have done better than I actually did.

16. I worry more about doing well on tests than I should.

17. Before taking a test, I feel confident and relaxed.*

18. While taking a test, I feel confident and relaxed.*

19. During tests, I have the feeling that I am not doing well.

20. When I take a test that is difficult, I feel defeated before I even start.

21. Finding unexpected questions on a test causes me to feel challenged rather than panicky.*

22. I am a poor test taker in the sense that my performance on a test does not show how much I really know about a topic.

23. I am not good at taking tests.

24. When I first get my copy of a test, it takes me a while to calm down to the point where I can begin to think straight.

25. I feel under a lot of pressure to get good grades on tests.

26. I do not perform well on tests.

27. When I take a test, my nervousness causes me to make careless errors.

Appendix E

The Mayer-Salovey-Caruso Emotional Intelligence Test

Mayer-Salovey-Caruso Emotional Intelligence Test™

Personal Summary Report

By John D. Mayer, Peter Salovey & David R. Caruso

Name:	**Jill Brown**
Administration Age:	30
Gender:	Female
Administration Date:	Friday, February 22, 2002

8.

What Is Emotional Intelligence?

Although the term "emotional intelligence" has come to mean many different things, it consists of two parts: emotion and intelligence, as the test authors most recently define it (e.g., Mayer, Salovey, & Caruso, 2000). "Emotions" refer to the feelings a person has in a relationship. For example, if a person

has a good relationship with someone else, that individual is happy; if the person is threatened, he or she is afraid. Intelligence, on the other hand, refers to the ability to reason with or about something. For example, one reasons with language in the case of verbal intelligence, or reasons about how objects fit together in the case of spatial intelligence. In the case of emotional intelligence, one reasons with emotions, or emotions assist one's thinking. That is, emotional intelligence, as measured by the MSCEIT™, refers to the capacity to reason with emotions and emotional signals, and to the capacity of emotion to enhance thought.

The Mayer-Salovey Ability Model of Emotional Intelligence

Dr. Peter Salovey and Dr. John D. Mayer first published their work on these concepts in 1990 (Mayer, DiPaolo, & Salovey, 1990; Salovey & Mayer, 1990). They then published a revised theory of emotional intelligence (Mayer & Salovey, 1997). This theory further elaborated the existence of four related areas of emotional intelligence. They called these areas "branches" to illustrate that the abilities were arranged in a hierarchical order from the least psychologically complex to the most psychologically complex.

Mayer and Salovey defined these specific abilities as *the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth* (Mayer & Salovey, 1997). Here is a summary of this four-branch model of emotional intelligence:

Perceiving and Identifying Emotions - the ability to recognize how you and those around you are feeling.

Using Emotions to Facilitate Thought - the ability to generate emotion, and then reason with this emotion.

Understanding Emotions - the ability to understand complex emotions and emotional "chains," and how emotions transition from one stage to another.

Managing Emotions - the ability to manage emotions in yourself and in others.

What Does the MSCEIT™ Measure?

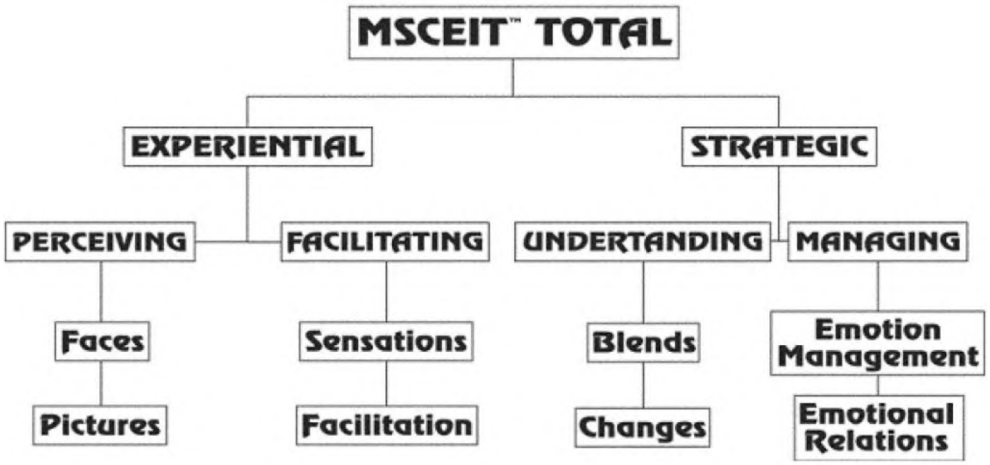
The MSCEIT™ is a performance test of emotional intelligence. A performance test provides an estimate of a person's ability by having them solve problems. The MSCEIT™ asks you to solve problems about emotions, or problems that require the use of emotion.

Emotional Intelligence In Context

Emotional intelligence is one of hundreds of parts of our personality. Is it the most important predictor of success in life or work? It probably is part of "success" but it is not the sole ingredient, nor is it the most important one.

The Scores You Will See

The MSCEIT™ yields a total emotional intelligence score as well as two area scores (Experiential and Strategic Emotional Intelligence). There are also four Branch scores, for Perceiving Emotion, Facilitating Thought, Understanding Emotion, and Managing Emotion. Finally, scores for eight individual Tasks are reported.



MSCEIT™ Scores

How MSCEIT™ Scores Are Reported

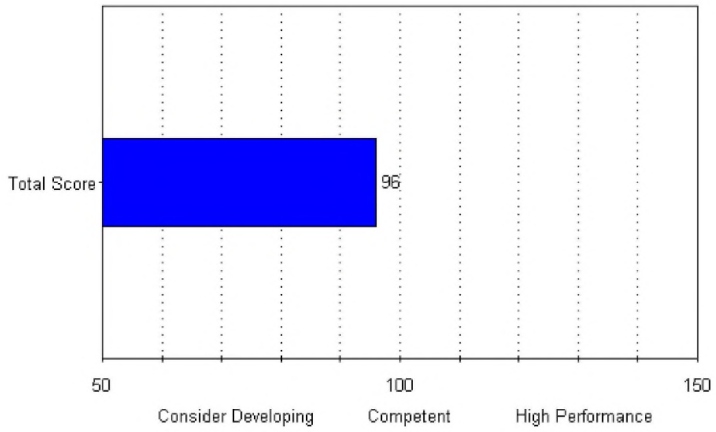
The MSCEIT™ scores are reported like traditional intelligence scales so that the average score is 100 and the standard deviation is 15. If a person obtains a MSCEIT™ score around 100, then they are in the average range of emotional intelligence. A person obtaining a score of 115 is one standard deviation above the mean, or, at the 84th percentile. If someone obtains an overall MSCEIT™ score of 85, they are one standard deviation below the mean, or, at the 16th percentile. Area, branch and task level results are scored in the same manner. As with all tests, the MSCEIT™ compares individuals against the normative sample, not with the population in general.

Variability of Scores

Your score is an approximate result. If you were to take the test again, there is a good chance that your score would be different, so please keep that in mind as you interpret your results. Each part of the MSCEIT™ has greater, and less, variability. Your scores are reported along with a 90% confidence interval or range. If you took the test a second time, you could expect with 90% confidence that you would receive a new score within the interval. In addition, test scores represent your actual ability, as well as other factors such as motivation, fatigue, language fluency, and so forth.

Total Emotional Intelligence Score

The following graph shows the standard score for total emotional intelligence. As with any global score, the MSCEIT™ Total score is a convenient summary of a person's performance on this test. The Total score compares an individual's performance on the MSCEIT™ to those in the normative sample. This score is a good place to start when analyzing your level of emotional intelligence.

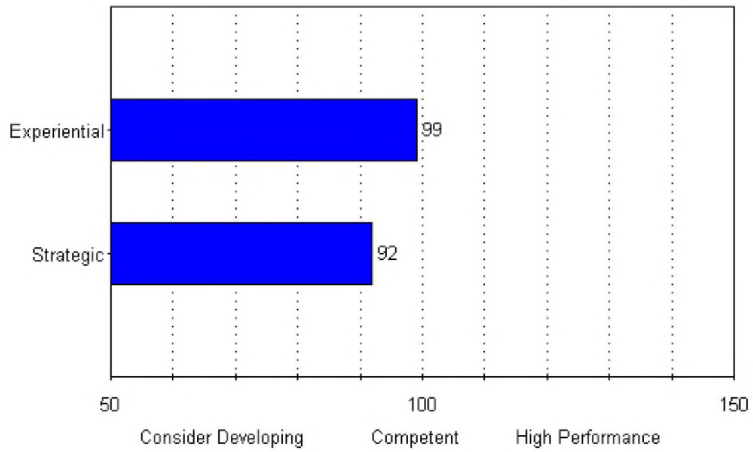


Your MSCEIT™ Total Score is 96. If you took the test again, your score would likely change somewhat due to the variability that is a part of the testing process. To determine how much your score might change, we have calculated a 90% confidence interval for your MSCEIT™ Total Score. This confidence interval is from 89 to 103 and reflects the range of scores within which you can be 90% confident your true ability falls.

MSCEIT™ Total Score
The Total emotional intelligence score indicates an overall capacity to reason with emotion, and to use emotion to enhance thought. It reflects the capacity to perform well in four areas: (1) the ability to perceive emotions, (2) to access, generate, and use emotions so as to assist thought, (3) to understand emotions and emotional knowledge, and (4) to regulate emotions so as to promote emotional and intellectual growth (after Mayer and Salovey, 1997, p. 8).
After the Total Score, the Area Scores provide you with a closer look at your MSCEIT™ performance.
MSCEIT™ Personal Summary Report : Jill Brown Page 5

Area Scores

Now, let's look at your two MSCEIT™ Area Scores. These are Experiential Emotional Intelligence and Strategic Emotional Intelligence.



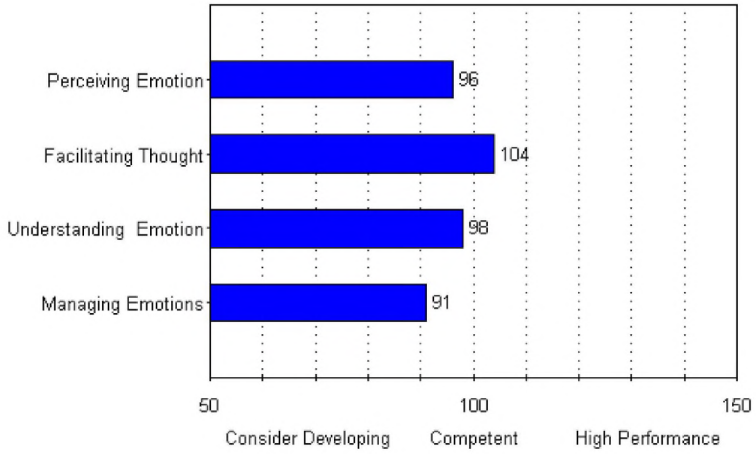
The 90% confidence interval for your Experiential Area score is 91 to 107, and for your Strategic Area

score is 84 to 101.

Experiential Emotional Intelligence Score The Experiential Emotional Intelligence Score (EEIS) focuses on the identification of emotion and its productive use in thought. Your EEIS indicates the capacity to feel emotion and to do so productively. It focuses on more basic-level processing of emotion (as opposed to the rational understanding and management of emotion). The EEIS is based on the Perceiving and Facilitation Branches of the emotional intelligence model. These two Branches may rely more on how feelings *feel* and how the individual responds and classifies such feelings.
Strategic Emotional Intelligence Score Strategic Emotional Intelligence involves higher-level, conscious processing of emotions. These Branches require reasoning *about* emotions, how they develop over time, how they may be managed, and how to fit emotional management into social situations. They are strategic in the sense that one may use such information to chart an emotional course for oneself and others according to personal and social needs. The score is based on your performance on the Understanding and Managing Branches of emotional intelligence.

Branch Scores

Recall that the MSCEIT™ is based on the four branch model of emotional intelligence. Next, let's examine your four MSCEIT™ Branch Scores to learn more about your emotional abilities



The 90% confidence interval for your Perceiving Emotions Branch score is 88 to 103, for your Facilitation of Thought Branch score is 93 to 115, for your Understanding Emotions Branch score is 87 to 109, and for your Managing Emotions Branch score is 81 to 101.

Perceiving Emotion

The Perceiving Emotions score concerns your ability to recognize how you and those around you are feeling. The first branch of the emotional intelligence model involves the capacity to perceive feelings accurately. Emotional perception involves paying attention to, and accurately decoding, emotional signals in facial expressions, tone of voice, and artistic expressions.

Accurate appraisal of emotions starts with attending to emotional expressions. If a person is uncomfortable with another person's expression of negative emotions, for instance, and they turn away every time they sense another's discomfort, they may not perceive accurately that other person's emotional state. While this Branch of the model also includes accurate appraisal of one's *own* emotions and the expression of emotion, the MSCEIT™ measures the appraisal of emotions in others and in images. Evidence suggests that the accurate appraisal of others is related to accurate

perception in oneself as well.

Facilitating Thought
Your Facilitating Thought score is the ability to employ your feelings to enhance the cognitive system (thinking) and, as such, this ability can be harnessed for more effective problem-solving, reasoning,
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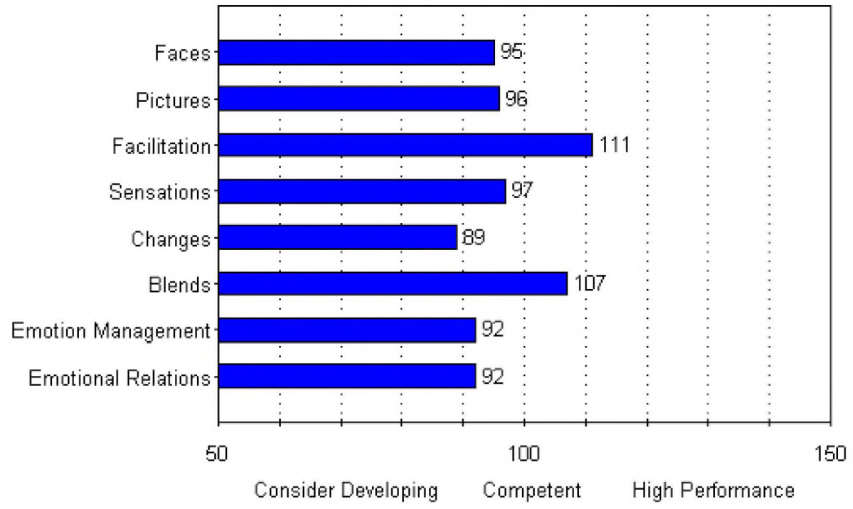
decision-making, and creative endeavors. Of course, cognition can be disrupted by emotions, such as anxiety and fear, but emotions also can prioritize the cognitive system to attend to what is important and even focus on what it does best in a given mood.
Emotions also change the way we think, creating positive thoughts when a person is happy, and negative when the person is sad. These changes in viewpoint force us to view things from different perspectives. Such shifting viewpoints may foster creative thinking.

Understanding Emotion
Emotions form a rich and complex interrelated symbol set, and many people discuss the existence of an "emotional language." Your score on the Understanding Emotions Branch reflects being able to label emotions and to reason with them at an effective understandable level.
Understanding what leads to various emotions is a critical component of emotional intelligence. For instance, annoyance and irritation can lead to rage if the cause of the irritation continues and intensifies. Knowledge of how emotions combine and change over time is important in our dealings with other people and in enhancing our self understanding.

Managing Emotions
Your Managing Emotions score concerns one's capacity to manage emotions successfully, when appropriate. Managing emotions means that you remain open to emotional information at important times, and closed to it at other times. It means successfully managing and coping with emotions. It also means working with feelings in a judicious way, rather than acting on them without thinking. For example, reacting out of anger can be effective in the short-run, but anger that is channeled and directed may be more effective in the long-run.
It is important to understand that the ability to successfully manage emotions often entails the awareness, acceptance, and use of emotions in problem solving. When we speak of emotional regulation, some people understand the term to mean the suppression of emotion, or rationalization of emotion. Managing Emotions involves the participation of emotions in thought, and the ability to allow thought to include emotions. Optimal levels of emotional regulation likely will neither minimize nor exaggerate emotion.

Task Scores

Individual Task scores should be interpreted with caution as they are not, on average, as reliable individually as are the Branch and Area scores. Nonetheless, the individual Task scores may be of use in the interpretative process and are supplied below.



The following sections describe what each of the Task scores measure. You can use these descriptions to help you better understand your results. The scores on these tasks will vary much more than will your other MSCEIT™ scores, and therefore, must be used with great caution.

Perceiving Emotions
Faces Task - In this task, designed to measure Perceiving Emotions, you were asked to identify how a person feels based upon their facial expression.
Pictures Task - Emotional perception also involves determining the emotions that are being expressed in music, art, and the environment around you. This aspect of Perceiving Emotions was measured by the task in which you indicated the extent to which certain images or landscapes expressed various emotions.

Facilitating Thought
Facilitation Task – Different moods assist certain kinds of problem solving. The Facilitation Task measures your knowledge of how moods interact and support our thinking and reasoning.
Sensations Task - This Branch was measured by a task in which you were asked to compare different
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emotions to different sensations, such as light, color and temperature.

Understanding Emotions
Changes Task – The Changes Tasks measures your knowledge of experiencing possibly conflicting emotions in certain situations and understanding emotional “chains,” or how emotions transition from one to another (e.g., how contentment can change into joy).
Blends Task - Understanding emotions refers to being able to connect situations with certain emotions (e.g., knowing that a situation involving a loss might make someone feel sad).

Managing Emotions
Emotion Management Task - The Emotion Management task asked you to rate the effectiveness of alternative actions in achieving a certain result, in situations where a person had to regulate their own emotions.
Emotional Relations Task - This task asked you to evaluate how effective different actions would be in achieving an outcome involving other people.
Remember: Task scores are rough approximations of one’s actual ability in these areas. These scores have much greater variability than do your other MSCEIT™ scores.

Supplementary Scales

This section provides the results for the Scatter Score, Positive-Negative Bias Score, and Omission Rates.

Scatter Score

Scatter Score = 90

High standardized scatter scores (>115) indicate a profile where there are large discrepencies in the results for the different tasks. Such scores may indicate a lot of variation in skill in different elements of emotional intelligence. Moderate scores show a typical amount of variation in the task results. Low scores (<85) indicate very consistent scores across the tasks.

Positive-Negative Bias Score

Positive-Negative Bias Score = 89

High standardized bias scores (> 115) indicate a more than typical tendency to respond to the pictorial stimuli by assigning a positive emotion. Moderate scores indicate a typical amount of positive and negative assignments to the pictorial stimuli. Low scores (<85) indicate that more than a typical amount of negative assignments to stimuli have been made.

Omission Rates

Omission Rate Overall = 0.00%
Omission Rate Section A = 0.00% (Faces)
Omission Rate Section B = 0.00% (Facilitation)
Omission Rate Section C = 0.00% (Changes)
Omission Rate Section D = 0.00% (Emotion Management)
Omission Rate Section E = 0.00% (Pictures)
Omission Rate Section F = 0.00% (Sensations)
Omission Rate Section G = 0.00% (Blends)
Omission Rate Section H = 0.00% (Emotional Relations)

If the overall omission rate is greater than 10%, the validity of the administration should be brought into question. If the omission rate for a given task is 50% or more, the score for that section (as well as associated Branch, Area and Total scores) will not be computed.

Percentiles

Some people prefer to view their scores as *percentiles* rather than as IQ-type scores. Percentile scores range from 1 to 99, where a score of 1 means that you would be at the lowest level compared to others, and a score of 99 would mean that your results would place you higher than 99% of the people in the standardization sample.

Total MSCEIT™	40
Experiential Area Score	48
Perceiving Emotions Branch	38
Faces Task	37
Pictures Task	39
Facilitating Thought Branch	61
Facilitation Task	77
Sensations Task	43
Strategic Area Score	30
Understanding Emotions Branch	45
Changes Task	23
Blends Task	69
Managing Emotions Branch	28
Emotion Management Task	29
Emotional Relations Task	29

Scoring Method : General

Demographic Correction : None

In developing the MSCEIT™, we examined several different ways to score the answers. We can compare your answers to those of experts on emotions, called the expert consensus, or to the ratings of other people, called the general consensus (or general scoring).

Our research has shown that the general and expert consensus scoring methods yield almost identical results.

The General Scoring Method was used in your report.

Cautionary Remarks

Scoring of the MSCEIT™ is based on North American data. People from emerging or non-Western nations taking the test, and non-native English language speakers, should be alert to the fact that cultural variation can lower scores on the MSCEIT™, and should check local norms where available. More generally speaking, an individual's personal functioning is the product of many qualities, and no one test captures them all. For that reason, the use of the MSCEIT™ with other psychological assessment instruments is encouraged. In addition, the consideration of MSCEIT™ results should always be considered in the context of consultation with a qualified professional.

Concluding Comments

Emotional intelligence can be defined and measured as an intelligence, or as a set of abilities. The MSCEIT™ provides you with an estimate of these emotional skills. Tests like the MSCEIT™ are

designed to help people learn more about themselves and to better understand their strengths. We are excited about the MSCEIT™ and we hope that it will provide you with useful information and insights. Thank you for taking the MSCEIT™!

John (Jack) D. Mayer Peter Salovey David R. Caruso

Item Response Table

The following response values were entered for the items on MSCEIT™.

Item #	Response	Item #	Response	Item #	Response	Item #	Response
1.	1	37.	A	73.	C	109.	5
2.	4	38.	E	74.	B	110.	1
3.	2	39.	E	75.	B	111.	1
4.	1	40.	C	76.	2	112.	5
5.	1	41.	D	77.	2	113.	5
6.	1	42.	C	78.	2	114.	1
7.	4	43.	B	79.	1	115.	4
8.	3	44.	B	80.	1	116.	5
9.	2	45.	C	81.	3	117.	4
10.	1	46.	A	82.	2	118.	5
11.	1	47.	B	83.	1	119.	1
12.	5	48.	B	84.	1	120.	3
13.	3	49.	C	85.	1	121.	E
14.	1	50.	B	86.	1	122.	A
15.	1	51.	D	87.	1	123.	A
16.	4	52.	B	88.	1	124.	E
17.	1	53.	C	89.	1	125.	A
18.	1	54.	D	90.	1	126.	D
19.	2	55.	A	91.	1	127.	D
20.	4	56.	E	92.	1	128.	B
21.	1	57.	E	93.	4	129.	E
22.	1	58.	A	94.	1	130.	E
23.	5	59.	C	95.	3	131.	B
24.	3	60.	D	96.	2	132.	A
25.	5	61.	C	97.	1	133.	E
26.	2	62.	D	98.	1	134.	A
27.	1	63.	B	99.	2	135.	A
28.	1	64.	D	100.	1	136.	E
29.	4	65.	E	101.	1	137.	B
30.	1	66.	D	102.	4	138.	B
31.	1	67.	C	103.	1	139.	D
32.	1	68.	D	104.	1	140.	B
33.	2	69.	E	105.	2	141.	B
34.	4	70.	B	106.	5		
35.	1	71.	B	107.	5		
36.	B	72.	A	108.	1		

References

Mayer, J. D., DiPaolo, M. T., & Salovey, P. (1990). Perceiving affective content in ambiguous visual stimuli: A component of emotional intelligence. Journal of Personality Assessment, 54, 772-781.

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Mayer, J. D., Salovey, P., & Caruso, D. R. (2000). Models of emotional intelligence. In R. J. Sternberg (Ed.), Handbook of Intelligence (pp. 396-420). Cambridge, England: Cambridge University Press.

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End of Report

Appendix F

Demographic Information Survey

1. Please tell us a bit more about yourself. How old are you? Note: you MUST be a legal adult (18+ years old) to participate in this study.
    - o 18
    - o 19
    - o 20
    - o 21
    - o 22
    - o 23
    - o 24
    - o 25
    - o Other (please specify):_____
2. What is your current year of study in university?
    - o First Year
    - o Second Year
    - o Third Year
    - o Fourth Year
    - o Fifth Year or more
    - o ( ) Other, please specify:
3. Are you an undergraduate student?
    - o Yes
    - o No

- Seminary
- Not sure

4. How much do you usually study for a test?
    - 0-3 hours
    - 4-7 hours
    - 8-11 hours
    - 12-15 hours
    - 15-18 hours
    - 19- 21 hours
    - 22+ hours
5. What is your gender?
    - Male
    - Female
    - Prefer not to answer
    - Other (please specify): _____
6. What is the ethnicity you identify as? (Check all that apply)
    - ⌗ Aboriginal
    - ⌗ Arab
    - ⌗ Black
    - ⌗ Caucasian
    - ⌗ Chinese
    - ⌗ Filipino
    - ⌗ Korean

- Latin American
- South Asian
- West Indian

( ) Other (please specify):_____

Appendix G

Extra Credit Form

Student Name	**Extra Credit % Earned (i.e. hours taken to complete study)**	**Class For Extra Credit *must be approved by your professor for that class**

Appendix H

Poster for Recruitment