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**EFFECTS OF AN EMOTIONAL INTELLIGENCE  
& MINDSETS INTERVENTION ON PRESERVICE  
TEACHERS' ORGANISATIONAL CITIZENSHIP  
BEHAVIOUR AND WORK ENGAGEMENT**

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## TABLE OF CONTENTS:

	<b>Page No.</b>
<b>Table of Contents</b>	i
<b>List of Tables</b>	vi
<b>List of Figures</b>	vii
<b>List of Abbreviations</b>	viii
<b>ACKNOWLEDGEMENTS</b>	x
<b>ABSTRACT</b>	xii
<b>CHAPTER 1: THE POSITIVE PSYCHOLOGY OF EMOTIONAL INTELLIGENCE &amp; MINDSETS</b>	
1.1. Introduction	1
1.2. Defining Emotional Intelligence (EI)	4
1.2.1. The Ability Model of EI	5
1.2.2. Mixed Models	7
1.2.3. Trait EI	8
1.3. A Preference for the Ability EI Model	9
1.4. Measuring Emotional Intelligence	11
1.4.1. Mixed Models- EI Measures	12
1.4.2. Trait EI Measures- Trait Emotional Intelligence Questionnaire	12
1.4.3. Ability EI Measures	13
1.5. EI in the Education Context	18
1.5.1. Correlates of EI in the Education Field	20
1.6. Summary of a Review on Emotional Intelligence	24
1.7. Mindsets or Implicit Theories	24
1.7.1. Fixed vs Growth Mindset	25
1.7.2. Correlates of Implicit Theories of Intelligence	30
1.7.3. Correlates of Implicit Theories of Personality	31
1.7.4. Correlates of Implicit Theories of Emotion	32
1.8. Summary of a Review on Mindsets	33
1.9. The Relationship Between Emotional Intelligence & Implicit Theories	34
1.10. Problem Statement & Key Research Gaps	36
1.11. Organisation of the Thesis	39

## **CHAPTER 2: STUDY OUTCOMES (ORGANISATIONAL CITIZENSHIP BEHAVIOUR & WORK ENGAGEMENT)**

2.1.	Overview	42
2.2.	Defining Organisational Citizenship Behaviour (OCB) and Work Engagement	42
2.2.1.	Organisational Citizenship Behaviour (OCB)	42
2.2.2.	Work Engagement	45
2.3.	The Importance of OCB and Work Engagement in Educational Context	46
2.4.	OCB and Work Engagement as Positive Psychology Constructs	48
2.5.	Emotional Intelligence (EI) and Implicit Theories as Predictors of OCB and Work Engagement	50
2.5.1.	EI and Implicit Theories as Predictors of OCB	50
2.5.2.	EI and Implicit Theories as Predictors of Work Engagement	54
2.6.	Proposed Direct and Indirect Interactions	57
2.7.	Research Objectives, Questions and Hypotheses	58
2.8.	Theoretical Framework: Frederickson's Broaden-and-Build Theory of Emotions	61
2.9.	Chapter Summary	64

## **CHAPTER 3: EMOTIONAL INTELLIGENCE INTERVENTIONS: A REVIEW OF LITERATURE**

3.1.	Overview	65
3.2.	Emotional Intelligence Interventions	65
3.3.	Ability EI Interventions	67
3.4.	Chapter Summary	71

## **CHAPTER 4: RESEARCH DESIGN & METHODOLOGY**

4.1.	Overview	72
4.2.	The Rationale for the Research Design & Methodology	72
4.2.1.	Pilot Study	74
4.2.2.	Main Intervention Research Study	75
4.2.3.	Intervention Evaluation	77
4.2.4.	Research Paradigm- Post-positivism (Critical Realism)	83
4.3.	Participants	85
4.3.1.	Sampling Strategy	86
4.3.2.	Sample Size Requirements	87
4.3.3.	Description of Participants (Pilot Study)	88
4.3.4.	Description of Participants (Main Intervention Study)	88
4.3.5.	Description of Participants (Intervention Evaluation)	91

4.4.	Main Instruments	91
4.4.1.	Wong and Law Emotional Intelligence Scale (WLEIS)	92
4.4.2.	Implicit Theory Measures	93
4.4.3.	Organisational Citizenship Behaviour Scale (OCB-S)	94
4.4.4.	Utrecht Work Engagement Scale (UWES)	95
4.5.	Intervention Evaluation Instruments	96
4.5.1.	Kirkpatrick Evaluation Form	96
4.5.2.	Semi-structured Interviews	97
4.6.	Data Collection Procedures	98
4.6.1.	Data Collection Procedures for the Main Questionnaires	98
4.6.2.	Data Collection Procedures for the Feedback Evaluation Form and Semi-Structured Interviews	100
4.7.	Data Analysis Procedures	100
4.7.1.	Data from the Questionnaires and Feedback Evaluation Form	101
4.7.2.	Data from Semi-Structured Interviews	101
4.8.	Ethical Considerations	102
4.9.	Chapter Summary	104
<b>CHAPTER 5: STUDY 1-PILOT STUDY</b>		
5.1.	Study Overview	106
5.2.	Current Investigation and Study Aims	108
5.3.	Research Questions and Hypotheses	109
5.4.	The Growth Mindset and Emotional Intelligence Training Programme (Original Intervention)	109
5.5.	Methodology	119
5.5.1.	Research Design	119
5.5.2.	Participants	119
5.5.3.	Instruments	120
5.6.	Analysis	121
5.7.	Procedures	121
5.8.	Results	122
5.8.1.	Impact of the Intervention on EI	122
5.8.2.	Impact of the Intervention on Implicit Theories	123
5.8.3.	Impact of Intervention on OCB	124
5.8.4.	Impact of Intervention on Work Engagement	124
5.8.5.	Results from the Feedback Form	125
5.9.	Discussion of Findings	126

5.10.	Changes to the Intervention	128
5.11.	Timing & Instruments	130
5.12.	Participants Recruitment Strategies	131
5.13.	Personal Reflections	131
5.14.	Chapter Summary	133
<b>CHAPTER 6: A BRIEF GROWTH MINDSET &amp; EMOTIONAL INTELLIGENCE INTERVENTION</b>		
6.1.	Overview	134
6.2.	Theoretical Foundations	134
6.3.	Objectives of the Intervention	136
6.4.	Length of the Intervention	137
6.5.	Techniques, Activities and Materials	138
6.6.	Course Content and Description	139
6.7.	Chapter Summary	145
<b>CHAPTER 7: STUDY 2- INVESTIGATING THE PSYCHOMETRIC PROPERTIES OF THE MAIN INSTRUMENTS</b>		
7.1.	Study Overview	146
7.2.	Investigating the Measurement Structure of the WLEIS in the South African Context	146
7.3.	Evaluating the Reliability of the Implicit Theory Measures in the South African Context	158
7.4.	An Evaluation of the Factor Structure of the Organisational Citizenship Behaviour Scale (OCB-S) using the South African Sample	164
7.5.	Evaluating the Reliability of the Ultrashort Work Engagement Scale (UWES-3)	175
7.6.	Discussion and Further Research	180
7.7.	Chapter Summary	182
<b>CHAPTER 8: STUDY 3- THE IMPACT AND PROCESS EVALUATION OF A BRIEF GROWTH MINDSET &amp; EMOTIONAL INTELLIGENCE INTERVENTION</b>		
8.1.	Study Overview	184
8.2.	Study Background	186
8.3.	Methods	193
8.4.	Data Analysis	200
8.5.	Results	203
8.5.1.	Preliminary Analysis	203
8.5.2.	Mixed ANOVA Results	208
8.5.3.	Repeated Measures ANOVA	215

8.5.4. Intervention Evaluation Findings	219
8.6. Discussion and Further Research	232
8.7. Chapter Summary	243
<b>CHAPTER 9: STUDY 4- DIRECT AND INDIRECT RELATIONSHIPS BETWEEN IMPLICIT THEORIES, EMOTIONAL INTELLIGENCE, ORGANISATIONAL CITIZENSHIP BEHAVIOUR AND WORK ENGAGEMENT</b>	
9.1. Study Overview	245
9.2. Study Background	248
9.3. Methodology	251
9.4. Data Analysis	252
9.5. Results	256
9.5.1. Correlation and HMRA	256
9.5.2. Mediation Analysis Results	261
9.5.3. Moderation Analysis Results	262
9.6. Discussion and Further Research	263
9.7. Chapter Summary	270
<b>CHAPTER 10: FINAL DISCUSSION, IMPLICATIONS, LIMITATIONS AND FUTURE RESEARCH</b>	
10.1. Overview	272
10.2. Summary of Findings by Research Objectives	272
10.3. Theoretical, Practical and Methodological Contributions	278
10.4. Policy Implications of the Findings	282
10.5. Limitations and Considerations for Future Research	283
10.6. Conclusion	285
<b>REFERENCES</b>	287
<b>APPENDICES</b>	351
Appendix 1: Ethical Approval- University of Nottingham	351
Appendix 2: Permission from the Two Universities	353
Appendix 3: Participant Information Sheets	355
Appendix 4: Consent Forms	359
Appendix 5: Permission to use Mindsetworks Material & the Kirkpatrick Evaluation	361
Appendix 6: Interview Schedule	362
Appendix 7: Manual for the Original Intervention	363
Appendix 8: Manual for the Main Intervention	367
Appendix 9: Questionnaires	369

## LIST OF TABLES

<i>Table 4.1: Participants who completed the instruments at various points</i>	89
<i>Table 4.2: Demographic characteristics of participants</i>	90
<i>Table 4.3: Description of participants (Intervention Evaluation)</i>	91
<i>Table 4.4: Order of Instruments</i>	99
<i>Table 5.1: Summary of the original growth mindset and emotional intelligence training programme</i>	116
<i>Table 5.2: Mean scores for the reaction and learning levels of the Kirkpatrick Evaluation Form</i>	125
<i>Table 7.1: The means and standard deviations of the WLEIS</i>	151
<i>Table 7.2: Standardised parameter estimates of the four-factor model and the second-order model</i>	155
<i>Table 7.3: Goodness of fit indices for the WLEIS four-factor and second-order models</i>	156
<i>Table 7.4: Inter-item correlations and Cronbach's alphas of the ITI, ITP and ITE scales</i>	162
<i>Table 7.5: Pattern Matrix of the OCB items</i>	170
<i>Table 7.6: Standardised parameter estimates of the three-factor OCB model</i>	171
<i>Table 7.7: Standardised parameter estimates of the two-factor OCB model</i>	173
<i>Table 7.8: Goodness of fit indices for the OCB two-factor model</i>	174
<i>Table 7.9: Factor loadings, inter-item correlation and Cronbach's alpha of the UWES-3</i>	179
<i>Table 8.1: Means, standard deviations and reliabilities of the scales</i>	204
<i>Table 8.2: Independent samples t-test results for EI, implicit theories and work engagement</i>	206
<i>Table 8.3: MANOVA results for OCB subscales (i.e., civic virtue and sportsmanship)</i>	207
<i>Table 8.4: The Kirkpatrick evaluation questionnaire: descriptive findings</i>	220
<i>Table 9.1: Intercorrelations between study variables</i>	258

## LIST OF FIGURES

<i>Figure 1.1: Mindsets, goal orientation and behaviour patterns</i>	26
<i>Figure 1.2: A 2x2 achievement goal framework (adapted from Elloit &amp; McGregor, 2001)</i>	27
<i>Figure 2.1: Five dimensions of OCB (adapted from Podsakoff et al., 1990)</i>	45
<i>Figure 2.2: Upward spirals generated by positive emotions (source: Fredrickson &amp; Cohn, 2008)</i>	63
<i>Figure 4.1: Triangulation design: convergence model (adapted from Creswell &amp; Plano, 2007)</i>	74
<i>Figure 4.2: A non-equivalent group interrupted time series design</i>	77
<i>Figure 4.3: Three-level evaluation framework (Adapted from Neilsen &amp; Randall, 2013)</i>	82
<i>Figure 4.4: Four-level evaluation model (adapted from Kirkpatrick &amp; Kirkpatrick, 2013)</i>	82
<i>Figure 4.5: Nine Provinces of South Africa (Source: Nations Online Project, n.d.)</i>	86
<i>Figure 4.6: Six phases of a thematic analysis (adapted from Braun &amp; Clark, 2012)</i>	102
<i>Figure 4.7: Structure of the empirical studies</i>	105
<i>Figure 7.1: Normal Q-Q plot of the WLEIS</i>	150
<i>Figure 7.2: The four-factor and the second-order EI models</i>	152
<i>Figure 7.3: Factor-factor CFA model of the WLEIS</i>	156
<i>Figure 7.4: Second-order CFA model of the WLEIS</i>	156
<i>Figure 7.5: Normal Q-Q plot of the OCB-S</i>	168
<i>Figure 7.6: Scree-Plot of the OCB-S</i>	169
<i>Figure 7.7: Three-factor model of the OCB-S</i>	172
<i>Figure 7.8: Two-factor model of the OCB-S</i>	173
<i>Figure 8.1: Triangulation design: convergence model (adapted from Creswell &amp; Plano, 2007)</i>	185
<i>Figure 8.2: A significant interaction between time and group on self-emotion appraisal</i>	209
<i>Figure 8.3: A significant interaction between time and group on ITI</i>	212
<i>Figure 8.4: Eight themes emerged from qualitative data</i>	222
<i>Figure 8.5: Research questions &amp; study hypotheses (Study 3)</i>	233
<i>Figure 9.1: Research questions and Study Hypotheses (Study 4)</i>	245



## **LIST OF ABBREVIATIONS**

- AIC:** akaike information criterion
- C.V:** civic virtue
- CFA:** confirmatory factor analysis
- CFI:** comparative fit index
- CONSC:** conscientiousness
- CR:** critical realism
- ECI:** emotional competency inventory
- ECVI:** expected cross-validation index
- EFA:** exploratory factor analysis
- EIS:** schutte emotional intelligence scale
- EQ-i:** emotional quotient inventory
- ESCI:** emotional and social intelligence competency inventory
- ESI:** emotional-social intelligence
- HMRA:** hierarchical multiple regression
- ITE:** implicit theories of emotion
- ITI:** implicit theories of intelligence
- ITP:** implicit theories of personality
- KMO:** kaiser-meyer olkin
- MBTI:** myres briggs indicator
- MEIT:** multifactor emotional intelligence test
- MLE:** maximum likelihood estimation
- MSCEIT:** mayer-salovey-caruso emotional intelligence test
- OCB:** organisational citizenship behaviour

**OEA:** other's emotions appraisal

**PAF:** principal axis factoring

**PST:** preservice teachers

**RMSEA:** root mean square error of approximation

**ROE:** regulation of emotions

**SDG:** sustainable development goals

**SEA:** self-emotion appraisal

**SEL:** social and emotional learning programmes

**SM:** sportsmanship

**SREIS:** self-rated emotional intelligence scale

**STEM:** situational test of emotional management

**STEU:** situational test of emotional understanding

**TA:** thematic analysis

**TEIQue:** trait emotional intelligence questionnaire

**TLI:** tucker-lewis index

**UOE:** use of emotions

**UWES:** utrecht work engagement scale

**WLEIS:** wong and law emotional intelligence scale

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## **ABSTRACT**

The constructs of emotional intelligence (EI) and mindsets have been independently studied. However, given the positive outcomes associated with these constructs, they could be employed in a complementary and pragmatic manner. Against this backdrop, this thesis developed and investigated an intervention based on EI and mindsets. The main objective was to test the effects of this intervention on preservice teachers' (PSTs) EI, mindsets, organisational citizenship behaviour (OCB) and work engagement. A review of the literature demonstrated that even though EI and mindsets interventions are increasing in education contexts, there seems to be a lack of interventions focusing mainly on PSTs. PSTs are vulnerable, as they are still in the process of constructing their teaching identity whilst dealing with the academic demands. Consequently, there is a need for interventions aimed to provide PSTs with the necessary psychological tools needed to cope with the pressures of their field.

Four studies guided this inquiry. The first part consists of a pilot study that examined the impact of a pilot intervention. This study also investigated the intervention content and overall feasibility of the study. Although quantitative results did not yield any statistical significance in any of the outcomes, the feedback received from participants signalled the importance of such an intervention in the education field. The second study tested the psychometric properties of the measures. This includes the Wong and Law Emotional Intelligence Scale (WLEIS); Implicit Theories of Intelligence Scale (ITI-S); Implicit Person Theories Scale (ITP-S); Implicit Theories of Emotion Scale (ITE-S); Organisational Citizenship Behaviour Scale (OCB-S), and the Utrecht Work Engagement Scale (UWES). The WLEIS was demonstrated to be a valid scale for the study participants. Results produced a good internal consistency, and both the four-factor and the second-factor models were good-fitting, albeit the second-order model was shown to be more parsimonious.

Whilst the implicit theories of intelligence and implicit theories of personality measures indicated fairly acceptable internal consistencies, the psychometric properties of the implicit theories of emotion scale were shown to be poor. The UWES consisting of 3 items also produced a poor internal consistency. Most interestingly, for the OCB-S, instead of a five-factor model, a two-factor model consisting of civic virtue and sportsmanship was found to be good-fitting. The third study investigated the impact of the growth mindset and EI intervention (GMEI). This study also examined the process factors that affected the implementation of the intervention. For a deeper understanding of the phenomena, quantitative and qualitative approaches were employed. The study consisted of the intervention group and a comparison group. Qualitative interviews included only PSTs who underwent the intervention and completed the study. The findings demonstrated that a growth mindset and some EI abilities could be taught through training. The notion that positive behaviours such as OCBs and work engagement could be developed remains questionable.

The fourth study examined the direct and indirect associations among the study variables. Findings demonstrated a positive and direct relationship between implicit theories of emotion and EI. As expected, there was a direct link between EI abilities and some outcomes (i.e., work engagement). Contrary to expectations, there was a negative relationship between implicit theories of intelligence and civic virtue. This specific finding relates to the notion of a false growth mindset. Moreover, although the moderating role of EI was not confirmed, EI was found to be a significant mediating variable in the relationship between implicit theories of emotion and study outcomes. Overall, these findings can be explained by a Broaden-and-Build theory of positive emotions, significantly contributing to the broader positive psychology movement. These findings also have some important practical implications.

# CHAPTER 1: THE POSITIVE PSYCHOLOGY OF EMOTIONAL INTELLIGENCE & MINDSETS

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## 1.1. Introduction

Traditionally, the field of psychology has primarily focused on negative aspects with the hope of treating human ills (Gabryś-Barker & Gałajda, 2016). This focus, however, offers a limited understanding of human potential and qualities that allow individuals to lead meaningful lives. Seligman and Csikszentmihalyi (2000), pioneers of the Positive Psychology (PP) movement, assert a need to build positive traits and institutions that improve the overall quality of life. According to Sheldon and King (2001, p.216), PP is “nothing more than the scientific study of ordinary human strengths and virtues”. To understand human functioning, it is essential to focus on what works, what is right and what is improving (Sheldon & King, 2001).

PP is said to operate at three levels, i.e., subjective, individual and group or community levels (Seligman & Csikszentmihalyi, 2000). At the subjective level, it is about positive experiences such as well-being, contentment, satisfaction, hope, optimism, flow and happiness (Boniwell, 2012; Seligman & Csikszentmihalyi, 2000). At the individual level, the focus is on building positive individual traits such as the capacity for love and vocation, courage, interpersonal skill, perseverance, forgiveness, originality and wisdom (Seligman & Csikszentmihalyi, 2000). Lastly, at the group or community level, the emphasis is on constructing positive institutions that foster civic virtues, altruism and social responsibility (Seligman & Csikszentmihalyi, 2000). In layman’s terms, it is about harvesting positive behaviours that contribute to more prominent causes larger than ourselves (Boniwell, 2012).

The call to shift to positive qualities has been accepted by many researchers. In fact, evidence supporting the significant role of PP in different environments such as in education, organisation and clinical settings is growing steadily (Donaldson et al., 2015; Donaldson & Ko, 2010; Seligman et al., 2009; Sin & Lyubomirsky, 2009; Waters, 2011). PP interventions aimed at cultivating positive traits have also been developed and currently serve as promising tools in mitigating undesirable outcomes such as depression whilst promoting well-being (Meyers et al., 2013). Despite its popularisation and wide implementation, PP interventions report small to medium effect sizes (Bolier et al., 2013; Donaldson & Ko, 2010). Some critics have also refuted the scientific rigour of PP interventions (Donaldson et al., 2015). Additionally, studies in this field, mainly PP intervention-based research, are saturated in western contexts, neglecting non-western African contexts consisting of unique socio-cultural factors. Ciarrochi et al. (2016) argue for a contextualised PP that considers the role of environmental events and social structures in shaping individual behaviours. At this juncture, the need to investigate PP-based training programmes in different contexts is unequivocal.

Research presented in this thesis seeks to extend PP knowledge by developing and evaluating the impact of a brief psychological intervention grounded on emotional intelligence (EI) and mindsets. This intervention was designed for preservice teachers (PSTs) based in South Africa with the hope of cultivating other arguably PP constructs, i.e. organisational citizenship behaviour (i.e. helping behaviour) and work engagement. Although the field of PP is broad and embodies many concepts, the notion of what constitutes a PP construct is explicit. PP constructs seek to enable the conditions of life and contribute to positive outcomes necessary for creating fulfilling lives (Seligman, 2010). EI and mindsets are not foreign concepts in the field of applied psychology, and evidence-based research presents them as significant PP constructs linked with Seligman's dimensions of well-being which involves the



experiences of positive emotions, engagement, quality social relationships, meaningfulness and a sense of accomplishment (Howell, 2016; Sanchez-Alvarez et al., 2016).

Defined as an ability to identify one's and others' emotions, understand, manage and use emotions effectively, EI has been associated with a myriad of positive outcomes such as well-being, job satisfaction and engagement (Brunetto et al., 2012; Sánchez-Álvarez et al., 2016). This concept has also been said to alleviate negative consequences of adverse outcomes such as burnout and depression (Fernández-Berrocal & Extremera, 2016; Mérida-López & Extremera, 2017). Mindsets or implicit theories should also be treated as a means to an end. These are conceptualised as beliefs that people hold about their qualities (Yeager & Dweck, 2012). The theory of mindsets identifies two distinct categories, i.e. fixed and growth mindsets. Individuals with a fixed mindset espouse a belief that their capabilities are set in stone and are not amenable to improvement (Yeager & Dweck, 2012). On the other hand, those with a growth mindset believe that skills, talent and abilities can be improved, albeit with effort, perseverance and effective or practical strategies (Dweck, 2015; Yeager & Dweck, 2012). Research reveals that a fixed mindset is related to negative affect and low subjective well-being (King, 2016). By contrast, some evidence denotes the vital role of a growth mindset in achieving well-adjusted personas (King, 2012). This mindset is associated with well-being and optimal emotional functioning (King & dela Rosa, 2019; Romero et al., 2014).

As can be deduced from the three aforementioned pillars of PP (i.e., subjective, individual and group), the fundamental goal of this movement is developing and maintaining positive traits and institutions (Seligman & Csikszentmihalyi, 2000). The present research extends across these pillars. An intervention based on EI and growth mindsets builds and enhances positive attributes (Castillo et al., 2013; Ruiz-Aranda et al., 2012; Yeager et al., 2013). Consequently, training PSTs to be emotionally intelligent and adopt a growth mindset is likely to capacitate them with the psychological skills needed to improve their quality of

life. As a matter of fact, this intervention could be a vital supplement to multiple psychological tools and strategies used to cope with life adversities (Sin & Lyubomirsky, 2009). The prevalence of stress and burnout among educators and high rates of depression among students stresses the need to develop and implement PP interventions in education institutions (Seligman et al., 2009; Skaalvik & Skaalvik, 2015).

## **1.2. Defining Emotional Intelligence (EI)**

EI has received considerable attention from academic researchers, practitioners, and the general public in the last few years (Pool & Qualter, 2018). This concept first emerged from Thorndike's (1920) (as cited in Heggstad, 2008, p.103) concept of social intelligence, defined as the "ability to manage and understand men and women, boys and girls to act wisely in human interactions". It was also identified in Payne's (1986) dissertation, where he spoke of emotional awareness. Salovey and Mayer (1990) formally conceptualised EI, and it was popularised by Daniel Goleman's book entitled *Emotional Intelligence: Why it can matter more than IQ*, which made strong claims about this construct's significance in all aspects of life (Ackley, 2016). Studies demonstrate that EI predicts well-being, job satisfaction, commitment and engagement (Anari, 2012; Brunetto et al., 2012; Carmeli et al., 2009).

Nevertheless, EI is a contentious concept with different models. The literature summarises them into three broad categories: EI as an ability, EI as a trait, and mixed EI. These are deemed to have created a schism in the study of EI. These models have also bred different measurements, which further creates confusion in the operationalisation of this construct. This section introduces the three EI models and then presents an argument as to why EI is considered an ability in the present study.

### 1.2.1. The Ability Model of EI

Salovey and Mayer (1990) considered EI as an ability and a type of intelligence, hence the term ‘ability EI’. According to this model, EI comprises mental abilities that can be hierarchically organised, from lower-functioning skills to higher-functioning skills (Mayer et al., 1999). The four dimensions of ability EI are a) Perceiving emotion (i.e. the ability to identify and express emotions accurately), b) Facilitating thought using emotion (i.e. the ability to effectively solve problems based on emotions and generate positive emotions in relation to experiences), c) Understanding emotion (i.e. the ability to understand emotions and their causes and consequences) and d) Managing emotion (i.e. the ability to manage one’s and others’ emotions effectively) (Mayer et al., 2016; Schneider et al., 2013).

The process of *perceiving emotion* is initiated when there is an input of emotional information from the external environment to our perceptual system (Mayer and Salovey, 1990). People high in EI quickly and accurately identify this emotional information both in themselves and others (Salovey & Mayer, 1990). Not only do they accurately perceive affect-laden details, but they also respond appropriately and empathetically (Salovey & Mayer, 1990). The *use of emotions to facilitate thought* dimension includes generating positive emotions and effectively using emotions to shape thought processes (Mayer et al., 2008). Emotions and moods influence how we think and solve problems, and a positive transformation of emotions may facilitate new decisions and new perspectives (Ackley, 2016; Salovey & Mayer, 1990). For instance, mood swings may cause flexible thinking and planning, where various options are considered, and positive emotions may facilitate creative thinking (Salovey & Mayer, 1990).

The *understanding emotion* dimension is about determining the underlying meaning, causes and consequences of emotions (Salovey & Mayer, 1990). It also involves being mindful of cultural differences in the experience and expression of emotions (Mayer et al.,

2016). Lastly, *managing emotions* refers to effectively managing others' emotions and evaluating different strategies to manage one's emotional reactions (Mayer et al., 2016). Salovey and Mayer (1990) contended that an emotionally intelligent person has the ability to control their emotions and elicit positive responses and behaviours from other people effectively.

This model considers EI as part of an individual's general intelligence. Adherents of the ability EI model posit that EI is a 'hot intelligence' (Mayer et al., 2016). While cold intelligence focuses on impersonal knowledge, for instance, math abilities, hot intelligence is concerned with personal knowledge significant to an individual (Mayer et al., 2016). More specifically, hot intelligence processes emotionally charged information such as emotions and social relationships (Mayer et al., 2008; Schneider et al., 2016). To this effect, EI can be understood as a mental ability that "involves accurate reasoning about emotions and the ability to use emotions to enhance thought effectively" (Mayer et al., 2008, p. 511).

The idea of EI as a mental ability was perpetuated by Thorndike's (1920) concept of social intelligence and further elaborated by Gardner (1983), as cited in Abdullah (2018), who had argued that humans have multiple intelligences, which include intrapersonal (i.e. the ability to understand one's emotions) and interpersonal intelligence (i.e. the ability to understand others' emotions). Most recently, Mayer et al. (2016) refined the hot intelligence concept by distinguishing between emotional, social and personal intelligence, as they considered all three to consist of vastly different problem-solving areas and systems. Ability EI refers to reasoning about emotions, social intelligence focuses on reasoning about groups and social rules, and personal intelligence is the ability to reason about personalities (Mayer et al., 2016). In essence, ability EI is a separate entity that is related to, but different from, personal and social intelligence. Overall, the ability model of EI considers EI as a set of mental abilities which form part of a broader intelligence.

### **1.2.2. Mixed Models**

Mixed models of EI incorporate a wide range of personality variables, skills and competencies (Mayer et al., 2008). The Bar-On model by Reuven Bar-On (1997; 2006) and Daniel Goleman's EI (1998) model fall within this domain. Influenced by Thorndikes' social intelligence concept, Bar-On (2010) asserted that EI is a combination of emotional and social competencies and skills that promote healthy behaviour. Emotional and social competencies and skills are most notable in this model. Hence, emotional intelligence under this banner is termed 'emotional-social intelligence' (ESI) (Bar-On, 2000). This model consists of 15 components which are organised into five key elements, namely a) interpersonal emotional intelligence (i.e. self-awareness and expression); b) interpersonal emotional intelligence (i.e. social awareness); c) stress management (i.e. emotional management); d) adaptability (i.e. ability to manage change); e) general mood (i.e. self-motivation) (Bar-On, 2006; Palmer et al., 2003).

Daniel Goleman's (1995) popular definition of EI also forms part of the mixed models of EI. This model is based on competencies that are said to increase job performance. According to Goleman (1998, p. 24), emotional and social competence is a "learned capability based on emotional intelligence that results in an outstanding performance at work". Goleman's (1995) early model identified five domains of EI, which included self-awareness (i.e., the ability to recognise and understand moods and emotions); self-regulation (i.e., the ability to effectively control emotions); motivation (i.e., an inner drive that enables one to pursue goals); empathy (i.e., the ability to understand other's emotions); and social skills (i.e. the ability to manage relationships) (Goleman, 2001).

After extensive research conducted in various organisations and professions, the model was reduced to four essential competencies, namely, *self-awareness* (i.e., understanding one's emotions); *social awareness* (i.e., understanding other people's emotions, needs and concerns); *self-management* (i.e., managing one's emotions) and *relationship management* (i.e., influencing others and effectively managing relationships) (Goleman, 2001, Wolff, 2005). Analogous to Bar-On's (2006) conception of EI, Goleman (2001) argued that EI consists of competencies and social intelligence dimensions. Competence is a key concept in this model. These have been defined as related but different sets of behaviours that demonstrate an underlying construct or intent (Boyatzis, 2008). Accordingly, EI can be understood as an 'underlying construct' indicated by the competencies identified in this model. Goleman's (1995) model culminated in a surge of interest in EI as he made strong claims about the significance of the concept in most areas of social life. Nevertheless, despite its wide use in organisations, this model is often met with a backlash due to its lack of scientific rigour (Ackley, 2016, Mayer et al., 2008).

### **1.2.3. Trait EI**

Trait EI developed by Petrides and Furnham (2000) is positioned as antithetical to ability EI and was constructed through a content analysis of different EI models (Petrides, Furnham & Mavroveli, 2007). EI under this banner is conceptualised as a "constellation of emotional self-perceptions located at the lower levels of personality hierarchies" (Petrides, 2010, p. 137). Put simply, it is concerned with how individuals perceive themselves in terms of managing their emotions and those of others. Trait EI consists of four dimensions which include *well-being* (i.e., a generalised sense of well-being characterised by confidence and high self-esteem); *self-control* (i.e., the ability to control one's emotions); *emotionality* (i.e., the ability to perceive and express emotions); and *sociability* (i.e. the capacity to perceive

oneself as having fulfilling relationships with excellent social skills) (Fernández-Abascal & Martín-Díaz, 2015; Santos et al., 2015).

Inherent in the definition of trait EI is a notion of personality. Petrides et al. (2007) argued that EI is a personality trait that falls within differential psychology. For trait EI to be integrated into mainstream differential psychology, evidence showing its relationship with existing personality taxonomies remains salient. Petrides et al. (2007) investigated the location of trait EI within Eysenck's three personality dimensions (i.e., neuroticism, extraversion and psychoticism) and the Big Five personality factor space. Factor analysis results demonstrated that trait EI is a distinct construct related to these personality structures (i.e., the Eysenckian model and the Big Five personality dimensions) (Petrides et al., 2007). Other studies revealed positive correlations between trait EI and personality factors, which further supports the definition of EI as a constellation of personality traits (Blanco et al., 2016; Petrides et al., 2010). However, the relationship between trait EI and personality models has received considerable scrutiny. For example, in their study on trait EI and the Big Five personality framework, Alegre et al. (2019) found that trait EI did not form a distinct factor; instead, EI dimensions were associated with different personality factors. These findings support Harms and Credé's (2010) argument that trait EI is largely embedded in existing well-established personality dimensions, which questions the incremental validity of this construct.

### **1.3. A Preference for the Ability EI Model**

Different models and conceptual definitions of EI have led antagonists to argue that EI is a fad that adds little to nothing to scientific inquiry. For instance, Locke (2005, p. 430) stated that "there is no such thing as actual EI, although intelligence can be applied to emotions as well as other life domains". Similarly, Landy (2005) asserted that the conceptual

definitions of EI continually change and further stated that claims arising from EI research are not scientifically verified. However, the present literature continuously demonstrates the importance of EI in different social domains, while the issue of diverse conceptual models remains (Mathur & Sareen, 2013; Miao et al., 2017). It is self-evident that EI needs a sensible conceptual definition for it to be a meaningful construct. Cherniss (2010) suggested that only one EI model should be employed to avoid the apparent conceptual dilemma. The present study adopted the ability EI model for several reasons.

EI, as defined by Salovey & Mayer (1990), has been accepted by most researchers (Cherniss, 2010; Jordan et al., 2010). According to Antonakis and Dietz (2010), the future of EI lies in the ability EI model. They further argued that the commitment of the research community to this model is likely to shape the way forward for EI research and our overall understanding of EI as a construct (Antonakis & Dietz, 2010). Furthermore, there is strong evidence that this model is more precise with regard to well-specified EI dimensions and is more scientific than other EI models (Matthews et al., 2007; Murphy, 2014). Trait EI and mixed models of EI should not be entirely considered 'EI' as they disregard the link between emotion and intelligence in their definitions (Mayer et al., 2004; 2008). Whilst trait EI is defined as a personality trait, mixed models refer to EI as a set of competencies. These definitions detract from the theoretical underpinnings of emotion and intelligence, and thus they cannot be termed EI (Mayer et al., 2008). To add, mixed models, in particular, have been accused of being over-inclusive (Antonakis & Dietz, 2010; Cherniss, 2010; Matthews et al., 2007; Roberts et al., 2010).

It has been alleged that these models seem to haphazardly include all the positive qualities that are not part of cognitive intelligence (Antonakis & Dietz, 2010; Cherniss, 2010; Mayer et al., 2008). On the other hand, trait EI is not considered a distinct concept that is separate from other existing personality traits (Joseph & Newman, 2010). This intense



backlash towards the trait EI and mixed models have provided an impetus for the wide acceptance of the ability EI model. It is noteworthy to mention that the ability EI model is not perfect. It suffers from measurement challenges, as will be discussed below. However, it is still regarded as the ‘gold standard’ for defining and understanding EI (Jordan et al., 2010). Deducing from this view, the ability EI model is appropriate for this study.

The ability EI provides a clear conceptual definition of EI and stipulates that EI as a set of abilities is amenable to change through training programmes (Mayer et al., 2004). Protagonists of this model assert that EI abilities rely on emotion-related knowledge, and this knowledge can be acquired through learning and training (Lopes et al., 2006; Mayer et al., 2004). Most of the existing EI training programmes are based on the mixed models of EI (Clarke, 2006). However, the content of these programmes includes the elements of basic soft skills training instead of focusing specifically on building EI abilities (Clarke, 2006). Consequently, there is a need for grounding EI research and EI interventions on the ability EI model with an appropriate aim of enhancing EI abilities.

#### **1.4. Measuring Emotional Intelligence**

Different conceptual forms of EI have led to a proliferation of EI measures. Currently, more than 30 different measures of EI have been developed and are being widely used for different purposes (O’Connor et al., 2019). Measurements are categorised based on the models. The measures chosen for this review were selected because they are mostly used within EI research (O’Connor et al., 2019). Mixed models EI measures and the trait EI measure will be briefly presented first, followed by a critical review of ability EI measures.

#### **1.4.1. Mixed Models- EI measures**

This branch consists of two prominent measures: the Emotional Quotient Inventory (EQ-i) and the Emotional Competency Inventory (ECI). The EQ-i is based on Bar-On's (2006) EI model. It was published in 1997 and was later revised to EQ-i 2.0 in 2011 (Ackley, 2016; Bar-On, 2006). This EQ-i 2.0 is a self-report measure of emotionally and socially intelligent behaviour and is sought to provide the overall estimate of emotional-social intelligence. This tool covers the five components of Bar-On's (2006) EI model as well as 15 subcomponents, namely *Emotional Self-Awareness; Assertiveness; Self-Regard; Self-Actualisation; Independence; Empathy; Interpersonal Relationship; Social Responsibility; Problem Solving; Reality Testing; Flexibility; Stress Tolerance; Impulse Control; Happiness and Optimism* (Bar-On, 1997; Palmer et al., 2003).

The ECI is based on Goleman's (2001) EI theory. This multi-rater instrument seeks to uncover an individual's strengths and some areas of improvement (Boyatzis et al., 2000). It was revised and renamed the Emotional and Social Intelligence Competency Inventory (ESCI) to measure both intrapersonal competencies and social intelligence features (Boyatzis, 2016). The ESCI consists of 12 competencies organised in four clusters, i.e., self-awareness, self-management, social awareness and relationship management (Boyatzis, 2009; 2016).

#### **1.4.2. Trait EI measure- Trait Emotional Intelligence Questionnaire**

Trait EI is mainly operationalised by the Trait Emotional Intelligence Questionnaire (TEIQue) (Petrides, 2009). The items for the instrument were developed through a content analysis of other EI models, which resulted in 15 facets and four factors (i.e. well-being, self-control, emotionality and sociability (Andrei, Siegling, Aloe, Baldaro & Petrides, 2016; Petrides, 2009). Hitherto, different forms of trait EI have been developed, which include the TEIQue-child form, TEIQue-adolescent form, 360° form, and has been translated into over 20

languages (Petrides, 2009; Siegling et al., 2015). The original TEIQue has reported satisfactory internal consistencies with Cronbach's alpha of .89 for females and .92 for males (Petrides, 2009; Siegling et al., 2015). The Cronbach's alpha for the sub-scales ranges from .75 to .84 (Siegling et al., 2015).

As has been mentioned before, existing research has raised concerns regarding the incremental validity of this instrument. Critics maintain that high correlations between the TEIQue and personality scales is questionable and suggest that this construct is redundant (Antonakis, 2004; Harms & Crede, 2010; Zeidner et al., 2008, 2012). However, proponents of the trait EI theory has tremendously contributed to the evolving research, which indicates that this instrument does have incremental effects in various areas of functioning, over and above personality dimensions (Andrei et al., 2016; Mikolajczak et al., 2007; Siegling et al., 2015).

### **1.4.3. Ability EI measures**

Ability EI measures are divided into two categories, i.e., performance-based ability tests and self-report ability tests of EI (Joseph & Newman, 2010).

#### ***1.4.3.1. Performance-based EI measures***

Analogous to intelligence measures, performance-based tests provide individuals with different tasks to be solved and assess an individual's performance on certain tasks (Mayer et al., 2000). As EI is considered an intelligence in the ability EI model, it is ideally measured through solving problems and determining correct answers (Mayer et al., 2008). Consequently, efforts were made to ensure that ability EI tests meet three broad criteria required for traditional intelligence. *Conceptual criteria* are concerned with the conceptualisation and operationalisation of the construct (Mayer et al., 1999). EI defined as a mental ability must be operationalised in a manner that provides 'correct' and 'incorrect' answers (Mayer et al., 2004). *Correlational criteria* imply that EI should moderately converge

with already established intelligences (Mayer et al., 1999; Mayer et al., 2008; Murphy, 2014). The third and last component to determine EI as a viable construct of intelligence is the *developmental criteria*. This means that EI is expected to increase with age and experience (Mayer et al., 1999; 2000).

Three performance-based ability tests of EI were identified in the literature, the Multifactor Emotional Intelligence Test (MEIT) (Mayer et al., 1999; 2000), its successor, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) in versions 1 and the current 2.0 version (Brackett & Salovey, 2006; Mayer, Salovey & Caruso, 2002); the Situational Test of Emotional Understanding (STEU) and the Situational Test of Emotion Management (STEM).

Participant answers on the MSCEIT V.2 are determined via group consensus (i.e. scoring is based on the solutions determined by the group) and expert scoring (i.e. emotion and psychology experts determine correct answers). Proponents of the MSCEIT have argued that high convergence between both scoring methods indicates their accuracy (Mayer et al., 2012). However, extant research denotes inadequacies in the scoring system. Maul (2012) asserts that even the majority of people could hold a misconception. As such, a consensus does not entirely preclude incorrectness. The expert scoring system has also been criticised for possible subjectivity. Sceptics argue that experts are fallible as some items on the ability EI measure may depend on contextual factors (Matthews et al., 2007, 2012; Maul, 2012). These inconsistencies cast doubt that the conceptual criteria of measuring EI as a true intelligence have been met. In addition, Joseph and Newman (2010) pointed out that the MSCEIT does not capture all facets of the ability EI model. For instance, this instrument only measures the perception of emotion in others and not emotional self-perception.

In terms of *correlational criteria*, EI should moderately converge with already established intelligences (Mayer et al., 1999; Mayer et al., 2008; Murphy, 2014). Existing

research indicates moderate relationships between MSCEIT and measures of cognitive intelligence (Di Fabio & Saklofske, 2014; Farrelly & Austin, 2007; Joseph & Newman, 2010; MacCann, 2010; Roberts et al., 2006; Mayer et al., 2008). For instance, correlations between various versions of Wechsler intelligence measures and the MSCEIT varied between .43 and .46 (Curci et al., 2013; Webb et al., 2013). However, earlier research revealed that results in this domain largely depend on the intelligence instruments used, and correlations seem to be only for one ability EI dimension on the MSCEIT (i.e. understanding emotion dimension) (MacCann, 2010; Roberts et al., 2006). This calls for more research on the relationship between ability EI dimensions as measured by the MSCEIT and cognitive intelligence.

Lastly, in terms of the *developmental criteria*. EI is expected to increase with age and experience (Mayer et al., 1999; 2000). Findings in this domain are also contentious. Mayer et al. (1999) reported that age is positively associated with ability EI and all its dimensions. Goldenberg et al. (2006) found age not related to the perceiving and using emotions dimensions, while some studies even found no correlation between age and MSCEIT and a negative correlation between age and perceiving emotion (Day & Carroll, 2004; Webb et al., 2013). High ability EI was also found for middle-aged adults compared to younger and older adults (Cabello et al., 2016). Although, low scores for older individuals may be explained by the age-related decline of cognitive abilities, as is the case with other intelligences (Bisiacchi et al., 2008; Cabello et al., 2014).

Notwithstanding apparent doubts surrounding measuring EI as an ability, the MSCEIT is highly recommended by proponents of the ability EI model; however, it was not chosen in the present study due to its apparent shortfalls. Most notably, the MSCEIT has been reported as a weak predictor of important life outcomes such as stress response and work outcomes, such as job satisfaction and job performance (Antonakis, 2015; Matthews et al., 2006; Miao et al., 2017; Petrides, 2011; Seigling et al., 2015). More research is needed to overcome the

challenges of the MSCEIT for it to be fully considered as part of the intelligence measure (Seigling et al., 2015).

The Situational Test of Emotion Understanding (STEU) and the Situational Test of Emotion Management (STEM) by McCann and Roberts (2008) were developed to address the shortfalls in the scoring methods of the MSCEIT. The STEU measures emotion understanding by assessing an individual's knowledge of emotions likely to be felt in various situations (Austin, 2010). An example item is '*Clara receives a gift. Clara is most likely to feel a) happy; b) angry; c) frightened; d) bored; e) hungry*'. Instead of an expert-based scoring system, the STEU based its answers on theory so that each item has only one correct answer (Austin, 2010; McCann & Roberts, 2008). The STEM measures the emotion management dimension of ability EI (McCann & Roberts, 2008). It is based on the situational judgement test and presents different scenarios which require an individual to choose the most effective emotion management response (McCann & Roberts, 2008). Research evidence shows satisfactory reliabilities (.67) of the STEM than the STEU (.48) (Austin, 2010; McCann & Roberts, 2008). These tests signal progress in terms of the development of performance-ability EI measures; however, they each measure only one EI dimension.

#### ***1.4.3.2. Self-report ability EI measures***

Many self-report scales based on Salovey and Mayer's (1990) ability EI model have been proposed, e.g. the Schutte Emotional Intelligence Scale (EIS); the Self-Rated Emotional Intelligence Scale (SREIS) and the Wong and Law Emotional Intelligence Scale (WLEIS). These scales test individuals' perceptions in relation to their EI abilities (Gutierrez-Cobo et al., 2016). The research community relies mostly on these scales merely due to their strong theoretical base as well as ease of use and accessibility. These scales demonstrate good reliability scores (Brackett et al., 2006; Gutiérrez-Cobo et al., 2016; Schutte et al., 1998); however, the factor structure of the EIS is questionable (Gignac et al., 2005).

Nevertheless, self-report measures are met with criticisms from other researchers who report them as lacking validity and susceptible to ‘fakability’ (Conte, 2005; Mayer et al., 2000; Tett et al., 2012). Indeed, respondents are likely to choose positive items to demonstrate high EI. However, it must be pointed out that emotional experiences are subjective; therefore, it is difficult to measure them objectively with the use of performance-based EI measures (Petrides et al., 2007; Siegling et al., 2015). Consequently, self-report measures of EI allow respondents to express their own emotional experiences freely.

This thesis used the Wong and Law Emotional Intelligence Scale (WLEIS) to measure EI. Although the WLEIS was developed using the Chinese population, it is widely used and has been validated in several countries, for instance, Malaysia, Pakistan, Japan, Korea and in some European countries (Pacheco et al., 2019; Fukuda et al., 2011; Fukuda et al., 2012; Libbrecht et al., 2010; Law et al., 2004; Iliceto & Fino, 2017; Li et al., 2012; Karim, 2010; Wan et al., 2015; Wong & Law, 2002). It has 16 items and consists of four dimensions (i.e. self-emotion appraisal; other’s emotion appraisal; use of emotion, and regulation of emotion) (Wong & Law, 2002; Law et al., 2004).

There are a number of reasons why this measure was chosen. Firstly, it is predicated on a solid ability EI model (Law et al., 2004). As previously mentioned, the ability EI conception contends that EI is a set of mental abilities (Mayer & Salovey, 1997). As such, measures under this realm are expected to fulfil three criteria for standard intelligence (i.e., conceptual, correlational and developmental) (Mayer et al., 2000). Wong and Law (2002) demonstrated that WLEIS is mildly associated with general mental abilities and found that EI, as measured by the WLEIS, increased with age and experience. Secondly, although it shares some drawbacks with other self-report measures (e.g., faking good), the WLEIS has been shown to be distinct from personality dimensions (Law et al., 2004; Shi & Wang, 2007). These findings demonstrate the discriminant validity of the scale.

Thirdly, the WLIES has shown predictive validity more than the MSCEIT (Pacheco et al., 2019; Law et al., 2004; Law et al., 2008). Lastly, considering the measurement problems of the MSCIET and other performance-based ability EI instruments, the WLEIS was considered a good alternative option for this study as it captures all the facets of the ability EI model. This measure will be further discussed in Chapter 7 (Study 2).

### **1.5. EI in the Education Context**

Teaching is an emotional practice (Hargreaves, 2000; Ruohotie-Lyhty et al., 2018; Schutz & Lee, 2014). As a result, there has been a surge in teacher emotion research since the 1990s (Hargreaves, 1998, 2001; Isenbarger & Zymbalas, 2006; Sutton & Wheatley, 2003; Yin et al., 2013). It is conceivable that teachers experience a wide range of emotions when teaching. Frenzel et al. (2016) identified three emotions commonly experienced by teachers: enjoyment, anger, and anxiety. For example, a teacher may experience pleasure when teaching, become angry when a student misbehaves, and feel anxious when dealing with a challenging student. These emotions are frequent and may significantly impact teachers, students and the teaching process (Burić et al., 2017; Pekrun & Linnenbrink-Garcia, 2012). They are also central to the formation of teacher identities (Schutz, 2014). Identity is not a fixed entity. Instead, it is a process involving the interpretation and reinterpretation of experiences shaped by the environmental context (Sutherland et al., 2010). For instance, negative emotions might alter teachers' beliefs about their abilities and how they perceive the teaching profession, particularly PSTs or teachers in training in the early phases of identity formation (Nichols et al., 2017; Teng, 2017). Consequently, such experiences affect teacher belief systems, which might significantly affect teaching practices.



Research highlights numerous triggers of negative emotions in the education context. Cross and Hong (2012) argue that teachers' emotional demands are precipitated by their interactions with students, colleagues, and parents. Job demands such as heavy workload, time pressure, organisational constraints and some curriculum issues also contribute to teachers' negative experiences (Baka, 2015; Skaalvik & Skaalvik, 2018; Tuxford & Bradley, 2015). The accumulation of these demands ultimately leads to occupational stress, burnout, depression, and high early-career teacher attrition rates (Baka, 2015; Beltman & Poulton, 2019; Clandinin et al., 2015; De Simone et al., 2016; den Brok et al., 2017; Harmsen et al., 2018; Schmid & Thomas, 2020). The teacher well-being index of 2019 indicated that 72% of education professionals in the U.K. experience work-related stress. South Africa is no exception where occupation health issues are exacerbated by lack of resources, poor school governance and broader socio-economic issues (Mouton et al., 2013). In light of the dire consequences of negative emotions, strategies to regulate emotions and promote positive effects in educational contexts are indispensable. Positive emotions foster quality teaching, drive solid student-teacher relationships, contribute to the use of positive coping strategies, and subsequently strengthen teachers' psychological well-being (Chang, 2013; Frenzel et al., 2015; Hagenuaer et al., 2015).

EI has been identified as an essential personal factor in this regard as it enables individuals to understand and manage their emotions effectively (Brackett & Simmons, 2015; Salovey & Mayer, 1990). Research indicates that EI plays a significant role in the teaching field. Ramana (2013) argued that teachers high in EI are caring and supportive. They recognise their students' needs and respond to them accordingly (Ramana, 2013). According to Hen and Sharabi-Nov (2014), socially and emotionally competent teachers focus on students' strengths and abilities and are fully aware of the impact of their emotions on other people. Mortiboys (2013, p. 4) concurred, and stated that these teachers "are more likely to develop a state in

their learners which is conducive to learning, with an increased likelihood of learners being engaged, motivated, ready to take risks in their learning, positive in their approach to learning, ready to collaborate, creative and resilient”.

A review of the literature demonstrates that EI influences significant outcomes in the education practice. Correlates of EI in education are explored below. Noteworthy to mention that in the study of EI, a variety of EI measures are employed. Thus, in the presented literature, EI can be understood as an ability, trait or a mixture of competencies.

### **1.5.1. Correlates of EI in the Education Field**

Research demonstrates that EI is associated with teacher well-being, teacher self-efficacy and teacher effectiveness. These associations are further explored below.

#### ***EI and teacher well-being***

The teaching profession presents multiple challenges, including workload, inadequate resources, poor interpersonal relations, a high number of students in class and pressures from internal and external stakeholders (Fernet et al., 2012; Walia & Tulsi, 2014). Due to these demands, teachers are more susceptible to occupational stress and, subsequently, burnout (Bermejo-Toro et al., 2016). Burnout is defined as a psychological syndrome characterised by emotional exhaustion, cynicism, feelings of indifference towards the job and lack of accomplishment (Maslach & Leiter, 2016). Research posits that burnout negatively affects intrinsic motivation and enthusiasm (Shen et al., 2015). Burnt-out teachers are not responsive to the needs of students and struggle to build healthy relationships with others, thus, undermining quality education and student achievement (Steinhardt et al., 2011).

EI has been proposed as a means of mitigating negative emotions and for enhancing teacher well-being (Molero et al., 2019; Vesely et al., 2013). Karakus (2013) investigated the relationship between EI and burnout among 425 primary school teachers. Using the WLEIS,

he reported a negative, moderate relationship between EI and burnout for both females ( $r = -.23$ ) and males ( $r = -.26$ ). Similarly, Ju et al. (2015) used the WLEIS to investigate the association between EI and burnout among 307 middle school teachers in China. They found a small, negative relationship between overall EI and overall teacher burnout ( $r = -.25$ ) (Ju et al., 2015). The relationship between EI and different negative burnout subscales was moderate and negative, i.e., emotional exhaustion ( $r = -.37$ ) and depersonalisation ( $r = -.37$ ) (Ju et al., 2015). In the same vein, Rey et al. (2016) reported a moderate, negative relationship between EI as measured by the WLEIS and negative burnout subscales, i.e., emotional exhaustion ( $r = -.38$ ); depersonalisation ( $r = -.32$ ), using a Spanish sample of 484 teachers. Despite small to moderate coefficients, these results suggest that EI is significant for teacher well-being.

Other measures of EI also report a negative correlation between EI and burnout. Alavinia and Ahmadzadeh (2012) reported a strong, negative relationship ( $r = -.69$ ) when they investigated EI as measured by the EQ-i and burnout. Similarly, Fiorilli et al. (2019) found a strong, negative association between trait EI and burnout ( $r = -.46$ ) among in-service Italian teachers. In addition, Cohen and Abedallah (2015) reported moderate to strong negative correlations ( $r = -.37$  to  $r = -.62$ ) between EI subscales (as measured by the SEIS) and burnout.

### ***EI and teacher self-efficacy***

Research demonstrates an interest in the role of teacher self-efficacy on critical educational outcomes (Klassen & Tze, 2014; Skaalvik & Skaalvik, 2010; Tschannen-Moran & Hoy, 1998, 2001). Self-efficacy, as defined by Bandura (1994), is people's beliefs about their capabilities. These beliefs shape how people feel, think, and behave (Bandura, 1994). In the teaching context, teacher self-efficacy refers to individual teachers' beliefs regarding their ability to perform educational goals (Skaalvik & Skaalvik, 2010).

Teachers high in self-efficacy are said to be more resilient, enthusiastic, and committed (Garvis & Pendergast, 2011; Tschannen-Moran & Hoy, 2001). Existing literature reveals that this concept predicts instructional quality, teacher effectiveness, job satisfaction and student motivation (Burić & Kim, 2020; Mojavezi & Tamiz, 2012; Schipper et al., 2020; Zee & Koomen, 2016). Based on these positive outcomes, it is vital to understand the drivers of teacher self-efficacy. As a positive personal factor, EI is positioned as a significant predictor of teacher self-efficacy. Research by Alrahji et al. (2017) suggests that EI is positively correlated with teacher self-efficacy. They investigated 1,240 math teachers in Oman and reported moderate, positive relationships between teacher self-efficacy and three EI dimensions (i.e., expression and appraisal of emotions in self, regulation of emotion in self and regulation of emotions in others). A study by Mouton et al. (2013) also reported a moderate, positive association ( $r = .28$ ) between EI and teacher self-efficacy among physical education teachers in Belgium. In Romania, Colomeischi and Colomeischi (2014) found similar results between EI and teacher self-efficacy ( $r = .44$ ) (see also Barari & Jamshidi, 2015).

Several researchers have explored the association between EI and teacher self-efficacy using PSTs as samples. Koçoğlu (2011) reported a moderate, positive relationship ( $r = .31$ ) between the two constructs among Turkish PSTs. Research by Chesnut and Cullen (2014) in the United States of America corroborated these results ( $r = .31$ ). A slightly higher relationship was found by Adeyamo and Chukwudi (2014) among 300 PSTs based in Nigeria ( $r = .46$ ). These results suggest the importance of EI in boosting self-efficacy for both experienced teachers and PSTs.

### ***EI and teacher effectiveness***

It is apparent from the presented literature that EI is associated with positive outcomes in the education sector, e.g., teacher well-being and self-efficacy. However, another important

implication for EI is teacher effectiveness. Research linking EI and teacher performance is scarce yet vital. Existing empirical evidence, however, reveals mixed findings. Some studies demonstrate strong evidence that EI contributes to teacher performance. For instance, Yoke and Patanik (2015) investigated the relationship between EI and job performance among primary and secondary school teachers in Malaysia. Findings revealed a positive association between all EI subscales and job performance. However, these results should be interpreted with caution, considering the self-rating job performance measure that was employed. Other studies have indicated that EI is a weak predictor of job performance but may influence teacher performance via certain positive attitudes, such as job satisfaction (Latif et al., 2017). Nevertheless, it would be conceivable to expect teachers with higher EI to perform well because their abilities to understand social situations may enable them to adjust their behaviours accordingly.

The findings presented above indicate that, albeit conceptual divisions, EI in all its forms is associated with significant desirable outcomes (Miao et al., 2017). In this regard, programmes aimed at developing EI have been designed and implemented (Clarke, 2006). Investigations have shown that such programmes are effective and, most importantly, lead to positive outcomes, including life satisfaction, happiness and psychological well-being (Schutte et al., 2013). However, despite the growing interest in EI programmes, research progress in the training and development of this construct has been stagnant, especially in the education field (Dolev & Leshem, 2017; Schutte et al., 2013). As has been mentioned before, most existing programmes are grounded in conceptually weak EI models (Clarke, 2006). Needless to say, there has been an expansion in the implementation of school-based Social and Emotional Learning programmes (SEL). However, these primarily focus on students' emotional and behavioural development (CASEL, 2015). This is salient progress in this field, but an approach that focuses on developing teachers' and PSTs' EI could also be

worthwhile. Research demonstrates that EI programmes improve teacher self-awareness, empathetic understanding and relationships (Brackett & Katulak, 2006; Hen & Sharabi-Nov, 2014). These positive qualities contribute to student engagement and achievement (Roorda et al., 2011). EI interventions are further discussed in Chapter 3.

## **1.6. Summary of a Review on Emotional Intelligence**

A literature review on EI indicates that EI is a contested concept with different models, including the ability model, mixed models and trait EI. This has resulted in different interpretations and a wide range of measurements. However, research consistently suggests that EI is essential in teaching and learning contexts as it contributes to well-being, teacher efficacy and teacher effectiveness.

Moreover, EI is not the only positive concept essential in educational contexts. Attempts to develop positive behaviours in educational settings also include a focus on mindsets or implicit theories (Dweck & Leggett, 1988; Molden & Dweck, 2006). The following section explores the concept of mindsets and discusses its relevance in the education context.

## **1.7. Mindsets or Implicit Theories**

Mindsets or implicit theories shape motivation and behavioural patterns (Dweck & Leggett, 1988; Dweck & Yeager, 2019; Molden & Dweck, 2006). They provide a lens that individuals can use to explain and make meaning of their experiences (Molden & Dweck, 2006). These meanings, in turn, determine how individuals behave and handle life experiences. The two mindsets of relevance to this study are fixed and growth mindset, which

is concerned with how people think about personal qualities. An overview of these mindsets is provided in the following section.

### **1.7.1. Fixed vs Growth Mindset**

Two specific implicit theories concerning individuals' beliefs about personal attributes emanate from Dweck and Leggett's (1988) motivational model rooted in social-cognitive principles. These are entity theory (or fixed mindset) and incremental theory (or growth mindset) (Dweck & Leggett, 1988; Yeager & Dweck, 2012). Individuals with a fixed mindset believe that their qualities (i.e., intelligence, personality, emotions, moral character etc.) are fixed and thus cannot be developed or changed (Dweck & Yeager, 2019; Molden & Dweck, 2006; Yeager & Dweck, 2012). A fixed mindset propels individuals to focus on their abilities, with a strong desire to be perceived as 'smart' at all times, even if it hinders their learning process (Dweck, 2008; Dweck & Master, 2008). Conversely, a growth mindset is a belief that human qualities can be developed and improved over time through effort and persistence (Dweck & Master, 2008; Dweck & Yeager, 2019). It is important to note that this mindset is the belief that people's personal qualities are not fixed but can be stretched and improved, not that everyone has the same potential and can learn anything with equal ease (Blackwell et al., 2007).

#### ***1.7.1.1. Fixed and growth mindsets and their relationship to goal orientation & behaviour patterns***

Dweck and Leggett (1988) argued that fixed and growth mindsets orient people to different goals, i.e., performance vs learning goals. Performance goals are endorsed mainly by individuals with a fixed mindset. The aim is to demonstrate one's abilities to others (Blackwell et al., 2007; Vandewalle, 2001). Individuals who pursue these goals tend to focus on proving the adequacy of their abilities and may avoid challenging tasks, as this might

‘demonstrate their inadequacies’ (Dweck & Leggett, 1988). For these individuals, putting an effort is a sign of incompetence; therefore, they tend to avoid exerting effort towards tasks and mainly understand failure as a lack of ability (Yeager & Dweck, 2012). Pursuing performance goals determines an individual’s motivation toward tasks and shapes how individuals respond to setbacks. These individuals tend to respond helplessly to challenges, as they experience negative self-cognition, negative affect, and low performance (Dweck & Leggett, 1988).

A growth mindset is associated with the pursuit of learning goals (Blackwell et al., 2007; Dweck & Leggett, 1988; Dweck & Master, 2008). Learning goals enhance skills and competencies (Blackwell et al., 2007; Vandewalle, 2001). Individuals who pursue these goals are concerned with their personal development and may exert effort and throw themselves deep into challenges for them to improve, learn and grow (Dweck & Leggett, 1988; Yeager & Dweck, 2012). They are not afraid to make mistakes and thus are more likely to respond more adaptively to setbacks (Yeager & Dweck, 2012). They react in a mastery-oriented manner as they tend to persist and seek new problem-solving strategies (Dweck et al., 1995).

Figure 1 below illustrates the associations between mindsets, goal orientation and behaviour patterns.

**Figure 1.1**

*Mindsets, Goal Orientation and Behaviour Patterns (adapted from Dweck, 1986)*

	Goal Orientation	Confidence in present ability	Behaviour Pattern
Fixed Mindset/ Entity Theory	<p>→ Performance goal (The aim is to gain positive judgements/ avoid negative judgements of competence)</p>	<p>If high</p> <p>But</p> <p>If low</p>	<p>→ Mastery-Oriented (Seek challenge; High persistence)</p> <p>→ Helpless (Avoid challenge, Low persistence)</p>
Growth Mindset/ Incremental Theory	<p>→ Learning Goal (The aim is to increase competence)</p>	<p>If high or low</p>	<p>→ Mastery-Oriented</p>



Furthermore, previous studies strongly support these assertions. They have demonstrated that individuals with a growth mindset endorse learning goals and have a mastery-oriented attitude towards challenging tasks, whereas those with a fixed mindset endorse performance goals and tend to respond helplessly during setbacks, especially when their perceived confidence in their ability is low (Blackwell et al., 2007; Dweck, 1986; Dweck & Leggett, 1988; Hong et al., 1999). These studies provide a solid foundation for the study of mindsets, goal orientation and behaviour. However, research in this field has evolved, and Dweck’s (1986) model shown in Figure 1 above has been shown to be too reductionist. Elliot and McGregor (2001) established that learning/mastery goals and performance goals could be characterised by two dimensions, i.e., approach or avoidance. Approach goals are oriented towards attaining positive outcomes, whereas avoidance goals aim to avoid negative results (Madjar et al., 2011; Elliot, 1999). For example, an individual may strive to perform successfully to reach desirable outcomes (*approach*) or avoid a task completely because of foreseeable undesirable outcomes (*avoidance*). Accordingly, a 2x2 achievement goal framework has been created, which includes mastery/learning-approach, mastery/learning-avoidance, performance-approach and performance-avoidance goals depicted in Figure 1.2 below (Cook et al., 2018; Elliot & McGregor, 2001).

**Figure 1.2**

*A 2x2 Achievement Goal Framework (adapted from Elliot & McGregor, 2001)*

	Learning/Mastery Goals	Performance Goals
<b>Approach</b>	<i>Mastery approach</i> (aim is to understand and master the task; the focus is on learning and acquiring competence)	<i>Performance approach</i> (aim is to perform better than others)
<b>Avoidance</b>	<i>Mastery avoidance</i> (aim is to avoid learning less or avoid performing worse than one has done before)	<i>Performance avoidance</i> (aim is to avoid performing worse than others)

Mastery-approach goals are focused on mastering the task, developing, and acquiring competence (Belenky & Nokes-Malach, 2012; Cook et al., 2018; Poortvliet et al., 2015; Stoeber et al., 2008). Therefore, the aim is to engage in deep learning to foster self-improvement. Mastery-avoidance goals focus on avoiding performing worse than one has done before (Baranik et al., 2010; Cook et al., 2018; Van Yperen et al., 2009). These individuals are afraid of not learning and making the best of the situation (Stoeber et al., 2008). On the other hand, performance-approach goals aim to demonstrate high competence and perform better than others whereas performance-avoidance goals focus on avoiding low competence relative to others (Black & Allen, 2017; Madjar et al., 2011; Poortvliet et al., 2015). Nevertheless, research on the 2x2 achievement goal framework has produced inconsistent findings. Several empirical studies support this extended goal orientation framework (Chen & Pajares, 2010; Cury et al., 2006). For instance, Cury et al. (2006) showed a positive effect of a growth mindset on both types of learning goals (i.e. mastery-approach & mastery-avoidance) and a direct positive effect of a fixed mindset on performance goals (i.e. performance-approach & performance-avoidance).

A meta-analysis by Burnette et al. (2013), however, found a low positive association of incremental theory with learning goals ( $r = .19$ ) and a negative relationship between incremental theory and performance-oriented goals ( $r = -.15$ ). The small effect sizes demonstrated by this study indicate a need to further investigate the associations between implicit theories and goal processes in this framework. Interesting results were also found in a study by Dickhäuser et al. (2016). They investigated the mechanism through which mindsets influence academic achievement. Consistent with theoretical expectations, students with a growth mindset portrayed high intrinsic motivation and high academic success because they upheld mastery goals. Fear of failure negatively affected students' intrinsic motivation via performance-avoidance goals. Interestingly, performance-approach goals mediated the

relationship between students' fear of failure and academic success. This means that whilst performance-approach goals induce fear of failure, they may also drive students to perform better in their studies. These results contribute to a long-standing debate on whether performance-approach goals enhance or impede achievement (Murayama et al., 2012).

Chen and Wong (2015) also reported unexpected results. Students who endorsed an incremental theory upheld both mastery goals and performance-approach goals, leading to their subsequent high academic achievement. According to Black and Allen (2017), the positive association between performance-approach goals and high achievement may be explained by a desire to perform higher than others. However, these inconsistent results need to be examined in future research studies. Whilst the relationship between growth mindset and mastery or learning goals is mostly supported, the association between fixed mindset and performance goals, especially performance-approach goals, is less conclusive. Furthermore, it is noteworthy to mention that previous research neglects the distinction of mastery goals (i.e., mastery-approach vs mastery-avoidance) (Poortvleit et al., 2015). Research indicates that the positive associations currently observed between learning goals and incremental theory might be due to only mastery-approach achievement goals (de Lange et al., 2010; Poortvleit et al., 2015; Van Yperen et al., 2009).

Mastery-approach goals are positively associated with self-efficacy, feedback-seeking behaviour, and adaptive learning strategies, whereas mastery-avoidance-goals are linked with negative affect, low job performance and cognitive ability (Baranik et al., 2010). Conceptually, these findings are not surprising. Individuals endorsing mastery-avoidance goals tend to avoid tasks for which there is a risk that they might not master them (Baranik et al., 2010). Consequently, they may experience a strong fear of failure, which may lead to anxiety and low performance. The positive association between performance-approach goals and high achievement may be explained by a desire to perform higher than others (Black &

Allen, 2017). Overall, the advent of Elloit and McGregor's (2001) 2x2 achievement goal model painted a complex picture of the relations between implicit theories and goal orientations. Notwithstanding the inconsistency of findings and based on strong empirical evidence, individuals with an incremental theory tend to adopt goals that are necessary for self-development, whereas those with an entity theory tend to focus on 'showing-off' their abilities, with little interest in learning from mistakes.

However, the study of mindsets is very broad as they have been said to be domain-specific (Dweck, 2017). This means that people can hold different mindsets in different areas. For instance, one person might believe that intelligence is fixed, and on the other hand, hold a view that personality is malleable. This thesis focuses on implicit theories about intelligence, personality, and emotion. Implicit theories about the nature of intelligence, personality and emotion are considered essential in educational contexts and significantly shape individuals' cognitive processes and behaviour (Yeager & Dweck, 2012). The correlates of these mindsets are presented below.

### **1.7.2. Correlates of Implicit Theories of Intelligence (ITI)**

Implicit theories of intelligence (ITI) are beliefs about the nature of intelligence (Dweck & Molden, 2000). Entity theorists believe that intelligence is static and cannot be developed, whilst incremental theorists believe that intelligence is an unfixed entity that is susceptible to development (Molden & Dweck, 2006). Research demonstrates that ITI influences academic achievement, self-efficacy, and emotional responses (Blackwell et al., 2007; De Castella & Byrne, 2015; Diseth et al., 2014). For example, a study by Romero et al. (2014) investigated the impact of ITI on academic outcomes. In their study, students completed surveys four times, between 6<sup>th</sup> grade and 8<sup>th</sup> grade. Results showed that students who believed that intelligence is malleable earned higher grades at all time points (Romero et al., 2014). Experimental studies also support the positive relationship between ITI and

academic achievement. Blackwell et al. (2007) studied the effect of a growth mindset intervention on students' academic achievement. Findings indicated that students in an experimental group showed enhanced motivation in their mathematics class. Costa and Faria's (2018) meta-analysis also confirmed a positive association between ITI and academic achievement, although the effect sizes ranged from low to moderate.

Some studies show that ITI interacts with other motivational variables to influence academic outcomes. A study by Kommaraju and Nadler (2013) found that individuals with low self-efficacy tend to hold a fixed mindset, which negatively impacts their academic motivation. Recently, Makacova and Wood (2020) suggested a mediating role of self-efficacy in the relationship between implicit theories and academic achievement. They reported that incremental beliefs positively influence self-efficacy, which results in higher academic achievement, whereas an entity belief is associated with low self-efficacy, which leads to low academic performance (Makacova & Wood, 2020). Furthermore, ITI has been shown to shape individuals' emotional responses. More specifically, research indicates that an incremental theory of intelligence predicts positive affect and constructive coping strategies, whereas an entity theory of intelligence predicts negative emotions such as anger and anxiety (King et al., 2012; Shih, 2011).

### **1.7.3. Correlates of Implicit Theories of Personality (ITP)**

Implicit Theories of Personality (ITP) are beliefs about the nature of personality traits (Chiu et al., 1997; Yeager et al., 2013). Entity theorists believe that personality consists of fixed and stable characteristics that cannot be developed, whereas incremental theorists hold a belief that personality traits are dynamic and amenable to change (Chiu et al., 1997). These implicit theories do not reflect one's personality traits but are reflective of how individuals react in social contexts. Consequently, they shape people's interpretations of events in

interpersonal contexts and subsequent behaviour (Schleider & Schroder, 2018; Yeager et al., 2013).

Research on ITP is largely focused on social conflict, aggression, and stress, where entity theorists are said to demonstrate more negative reactions during social conflicts and report high aggression and stress levels compared to incremental theorists (Li et al., 2019; Yeager et al., 2013; Yeager, 2012). For example, a study by Yeager et al. (2014) investigated the relationship between implicit theories and responses to social exclusion among ninth-grade students. Results indicated that students with a fixed mindset reacted negatively to social exclusion and reported high levels of stress, anxiety, and lower grades (Yeager et al., 2014). These findings are also confirmed by intervention-based studies that demonstrate that teaching an incremental theory of personality results in low stress and aggression levels (Schleider et al., 2019; Yeager et al., 2013; 2014).

Moreover, the study of the impact of ITP is gaining traction in organisational settings. Proponents of the role of mindsets in the workplace reveal that ITP significantly influences employee performance evaluation and largely affects coaching processes (Heslin et al., 2005; Heslin & Vandewalle, 2011; Heslin et al., 2006). It is conceivable that managers who believe that personality attributes are fixed and stable tend to judge employees' performance based on previous performance, and, therefore, will be unlikely to help employees develop and improve. Literature in organisational settings is in its nascent phase. Nonetheless, these studies shed light on the negative impact of a belief that personality traits are fixed.

#### **1.7.4. Correlates of Implicit Theories of Emotions (ITE)**

Implicit Theories of Emotions (ITE) are implicit beliefs about the nature of emotions. Some individuals believe that emotions are fixed and uncontrollable (i.e. entity theorists), whereas others view emotions as malleable and controllable (Tamir, Srivasta, John & Gross,

2007). Following the logic depicted in implicit theories about intelligence and personality, an entity emotion theory predicts negative outcomes (Ford et al., 2018; Kappes & Schikowski, 2013; Romero et al., 2014). For instance, Tamir et al. (2007) conducted a longitudinal study to investigate the impact of ITE on affective and social outcomes. Results revealed that individuals with an entity theory experienced more negative emotions, had lower well-being and were struggling to adjust, as indicated by a lack of social support (Tamir et al., 2007). Similarly, King and dela Rosa (2019) reported that an entity theory of emotion predicted negative emotions, anxiety, and depression and was negatively associated with life satisfaction. Overall, this empirical evidence suggests that ITE are of utmost importance for an individual's emotional and social functioning.

### **1.8. Summary of a review on Mindsets**

The literature review on mindsets or implicit theories reveals that it is a significant concept in educational settings. Mindsets are defined as beliefs about human qualities. How individuals view their capabilities, qualities, or characteristics shapes their cognition, emotions and behaviour. Two mindsets in which individuals can differ are a fixed mindset and a growth mindset. A fixed mindset is associated with adverse outcomes such as low academic scores and overall low well-being, while a growth mindset is associated with desirable outcomes such as positive affect, high performance and optimum well-being. These findings are strongly substantiated by intervention studies demonstrating that teaching a growth mindset contributes to positive outcomes (e.g., Blackwell et al., 2007). In addition, a theory of mindsets reveals that these beliefs are domain-specific. This thesis focuses on three domains, i.e., intelligence, personality and emotion, as they have been shown to be essential in the education field.

Now that EI and implicit theories have been clearly defined, it is crucial to turn to the association between these two concepts.

### **1.9. The Relationship between Emotional Intelligence & Implicit Theories**

Previous research has shown that implicit theories strongly predict domain-specific outcomes (Romero et al., 2014). For instance, implicit theories of intelligence are more associated with academic outcomes, and implicit theories of emotion correlate with emotion-related variables (Romero et al., 2014). A review of the literature on implicit theories reveals a need to investigate the relationship between implicit theories and other attributes, such as EI. As it is known, implicit theories are self-theories about the malleability of personal qualities, whereas ability EI is understood to be located in the intelligence domain and refers to the ability to understand and control emotions (Dweck, 2012; Salovey & Mayer, 1990). Drawing on the domain-specificity of implicit theories and the conceptualisation of EI as an ability, it is plausible to expect ability EI to be positively associated with implicit theories of intelligence and emotion and not implicit theories of personality.

The significance of both implicit theories and EI in the education field is evident, yet there is a lack of studies investigating their relation. Currently, to the researchers' knowledge, no studies have investigated the link between ITI and ability EI. However, the positive association between these variables is conceivable, considering that the ability EI can be interpreted as a form of intelligence (Mayer et al., 2016). As such, individuals who believe that intelligence can be improved through effort are likely to work towards their ability to manage their emotions. Although research on ITE and EI is stagnant, significant efforts have been made to delineate the relationship between these constructs. Research in this field is largely focused on the associations between ITE and the concept of emotion regulation which



can be understood as a part of EI (Tamir et al., 2007). Emotion regulation is an ability to influence how emotions are experienced, expressed and managed (Gross, 1998; 2013).

The most researched strategies of emotion regulation are cognitive reappraisal (i.e. a process to transform the meaning of the situation or a stimulus cognitively) and expressed suppression (i.e. involves a process of inhibiting the expression of emotions) (Gross, 1998). Cognitive reappraisal is deemed to be the most effective strategy for regulating negative emotions (Gross, 2002). Indeed, when individuals reframe and re-interpret negative experiences (e.g. *'I have failed an exam paper, but this gives an opportunity to learn and use different studying strategies'*), they are more likely to lead healthier lives than those who harbour negative emotions through emotion suppression. Research indicates that individuals with an entity theory of emotion demonstrate low emotion regulation and make less use of cognitive reappraisal (De Castella et al., 2013; Schroder et al., 2015; Tamir et al., 2007). Thus, individuals who believe that emotions are not static tend to effectively manage and control their emotions using effective emotion regulation strategies, such as cognitive reappraisal. To the best of the researcher's knowledge, only one study has directly examined the relationship between ITE and EI. Using the ability-based MSCEIT test, Cabello & Fernández-Berrocal (2015) found that ITE positively predicted ability EI, which means that individuals who believe that emotions are malleable showed a higher ability to control and manage emotions.

The findings presented above form the basis of this thesis. Cabello and Fernández-Berrocal (2015) argued that the relationship between ITE and EI suggests significant implications for developing EI interventions. They further indicated that EI interventions should be complemented with information about the malleability of emotions to enhance the effectiveness of these programmes (Cabello & Fernández-Berrocal, 2015). The researcher postulates that implicit theories, specifically implicit theories of intelligence and emotion, predict an individual's ability to regulate and manage their emotions. It is hypothesised that

individuals who believe intelligence and emotions are malleable are more open to managing and using their emotions effectively. Furthermore, the intervention included in this research is based on both the theory of mindsets and EI. Teaching individuals about the malleability of personal attributes is likely to reinforce the use of effective emotion management strategies, consequently enhancing EI abilities.

### **1.10. Problem Statement & Key Research Gaps**

Teachers experience both positive and negative emotions in the classroom (Keller et al., 2014). These emotions affect instructional behaviour, cognition and perception (Brackett & Simmons, 2015; Izard, 2013; Keller et al., 2014). Whilst positive emotions breed desirable results such as student engagement, teacher effectiveness and positive relations, negative emotions have been associated with undesirable outcomes and consequences (Hagenauer et al., 2015; Sutton, 2005). Studies demonstrate that negative emotions lead to burnout and contribute to early career attrition (Clandinin et al., 2015; den Brok et al., 2017; Frenzel et al., 2016; Harmsen et al., 2018). This necessitates a need to employ effective strategies to curb these undesirable consequences.

The concept of EI is positioned as a vital psychological construct to manage the emotional demands in this field (Corcoran & Tormey, 2012). Nevertheless, a review reveals that research on EI in the educational field is scant. Most existing studies primarily focus on organisational settings and overlook the education field, which may also greatly benefit from the positive consequences of EI. A handful of studies investigating the impact of EI in educational settings are concentrated on a few constructs. Research demonstrates that EI has been associated with teacher well-being, teacher self-efficacy and, to some extent, teacher performance. To this effect, the extent to which EI affects other essential concepts in education

needs to be explored further. In addition, there seems to be a lack of studies examining the effects of EI, specifically on preservice teachers. PSTs may not cope with the stressors found in the early years of their careers (Vesely et al., 2014). Thus, as a positive psychological construct, it is arguable that EI may act as a preventive measure and alleviate the adverse outcomes of multiple stressors experienced in the teaching field.

Furthermore, in an attempt to promote positive behaviours in educational settings, researchers have also turned to the concept of ‘mindsets’. Research in this area differentiates between two mindsets, i.e., fixed mindset (i.e., a belief that personal attributes are fixed and cannot be improved) and a growth mindset (i.e., a belief that personal attributes are amenable to change through effort, persistence and effective strategies) (Yeager et al., 2013). A fixed mindset has been associated with negative outcomes such as stress, and a growth mindset has been associated with positive outcomes such as well-being (Yeager et al., 2013; Yeager & Dweck, 2012). Although research on mindsets is well-established in educational contexts, the focus has been largely on learners, ignoring the ‘mindsets’ of teachers and PSTs, which may significantly affect their individual well-being and the overall teaching and learning process (Jones et al., 2012). For instance, a teacher who is confident in their abilities and believes that students can improve their abilities may provide students with extra support, potentially leading to student engagement and academic success. Therefore, there is a need to investigate teachers’ implicit theories at an early stage to ensure that they are well-equipped to guide and motivate learners. In addition, research on implicit theories seems to be centred around particular academic (e.g. academic achievement) and emotion-related outcomes (e.g. anxiety). Accordingly, this literature needs to be expanded by linking implicit theories with different positive outcomes.

Of particular interest is the association between implicit theories and EI. Research demonstrates positive contributions of these concepts in the education field. Nevertheless,

there seems to be a lack of studies examining how these concepts could be linked pragmatically. Research demonstrates that EI abilities and a growth mindset can be trained (Blackwell et al., 2007; Schutte et al., 2013). However, EI interventions have been based on weak mixed EI models, and there seems to be a lack of such programmes in the educational context (Clarke, 2006; Dolev & Leshem, 2017). It is envisaged that a growth mindset theory could strengthen the impact of an EI training programme (Cabello and Fernández-Berrocal, 2015). Against this backdrop, the main aim of this thesis is to investigate the impact of a brief psychological intervention based on EI and implicit theories. It sought to examine the effect of this intervention on PST's EI, implicit theories, organisational citizenship behaviour (OCB) and work engagement.

Furthermore, a review of the literature shows that previous research is based mainly on correlational designs, which preclude causes and effects (Altman & Krzywinski, 2015). Data in this thesis involves longitudinal data that is collected in four points, i.e., four weeks before the intervention, immediately before the intervention, immediately after the intervention and during follow-up (i.e., four weeks after the intervention). According to Frees (2004), longitudinal data enables researchers to track changes in dependent variables over time and can determine the causal relationships between study variables. With such data, researchers can determine temporal ordering by demonstrating the “sequence of changes in variables” (Sánchez-Álvarez et al., 2015, p. 3). Since there is currently no published study of this nature, this thesis contributes to academic knowledge. It will expand the knowledge bases of EI and mindsets training and development and will have substantial practical implications for teacher development practices. The theoretical and practical implications of this research will be further discussed in an integrated manner in Chapter 10.

### **1.11. Organisation of the Thesis**

This thesis has ten chapters, and inherent in these chapters are four main empirical studies that aim to address different research aims, questions, and hypotheses.

#### **Chapter 1: The Positive Psychology of Emotional Intelligence and Mindsets**

This chapter provides a study background and well-positions this thesis within the positive psychology field. A literature review on the key concepts, which include emotional intelligence and mindsets or implicit theories, is presented in this chapter. It delineates the relationship between these constructs. This chapter concludes with the structure of the thesis.

#### **Chapter 2: Study Outcomes: Organisational Citizenship Behaviour and Work Engagement**

This chapter presents a literature review of the study outcomes (i.e., organisational citizenship behaviour and work engagement). These concepts are located within the positive psychology movement and are also discussed in relation to EI and implicit theories. There will also be a brief discussion of the proposed direct and indirect interactions between study variables. This chapter further provides research objectives and research questions. It concludes with a discussion of a theoretical framework.

#### **Chapter 3: Emotional Intelligence Interventions: A Review of Literature**

This chapter provides a literature review of emotional intelligence interventions. More specifically, the interventions included in this review are based on the ability EI model and have been implemented in educational contexts.

#### **Chapter 4: Research Design & Methodology**

This chapter details the research methodology employed in this thesis. The rationale for a mixed-methods design is provided. The sampling strategy, data collection procedures,

data collection instruments, data analysis and ethical considerations are also presented in this chapter.

### **Chapter 5: Study 1: Pilot Study**

In this chapter, the findings of a pilot study are presented and discussed. This chapter also outlines the researcher's reflections and changes to the intervention.

### **Chapter 6: A Brief Growth Mindset & Emotional Intelligence Intervention**

The purpose of this chapter is to outline the intervention employed after the modifications observed in the pilot study. The theoretical foundations of the intervention are presented. This chapter also details the objectives of the intervention, length, techniques, activities and materials used in this intervention. This chapter ends with the intervention content description.

### **Chapter 7: Study 2: Investigating the Psychometric Properties of the Main Instruments**

This chapter presents a discussion of the findings of study 2, which investigates the psychometric properties of the main instruments. This includes the Wong and Law Emotional Intelligence Scale (WLEIS), Implicit Theories of Intelligence Scale (ITI-S), Implicit Person Theory Scale (ITP-S), Implicit Theories of Emotion Scale (ITE-S), Organisational Citizenship Behaviour Scale (OCB-S) and the Utrecht Work Engagement Scale (UWES).

### **Chapter 8: Study 3: The Impact and Process Evaluation Results of a Brief Growth Mindset and Emotional Intelligence Intervention**

In this chapter, the findings of Study 3 are presented and discussed. This study evaluates the impact of a brief growth mindset and emotional intelligence intervention. It also aims to assess the processes employed in the implementation of this intervention.

**Chapter 9: Study 4: Direct and Indirect Relationships between Implicit Theories, Emotional Intelligence, Organisational Citizenship Behaviour Subscales and Work Engagement**

This chapter presents and discusses the results of Study 4, which aimed to investigate the associations among the study variables. This study reveals the direct and indirect effects of the relationships between implicit theories, emotional intelligence, organisational citizenship behaviour subscales, and work engagement.

**Chapter 10: Final Discussion, Implications and Future Research**

This chapter provides a synthesised discussion of the findings presented in the thesis. Subsequently, theoretical contributions, practical implications, limitations and directions for future research are outlined.

## **CHAPTER 2: STUDY OUTCOMES (ORGANISATIONAL CITIZENSHIP BEHAVIOUR & WORK ENGAGEMENT)**

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### **2.1. Overview**

This chapter provides an overview of the two outcomes of the study, i.e., organisational citizenship behaviour (OCB) and work engagement. Section 2.2. presents a conceptualisation of these constructs. Section 2.3. discusses the importance of OCB and work engagement in the educational context. Section 2.4. locates OCB and work engagement within the positive psychology framework. In Section 2.5., emotional intelligence and implicit theories are presented as predictors of OCB and work engagement. Section 2.6. briefly discusses the proposed direct and indirect interactions between study variables. Section 2.7 presents the research objectives and questions. In Section 2.8., a theoretical framework will be presented. Finally, this chapter concludes with a summary in Section 2.9.

### **2.2. Defining Organisational Citizenship Behaviour (OCB) and Work Engagement**

#### **2.2.1. Organisational Citizenship Behaviour (OCB)**

Katz (1964) suggested three kinds of behaviour necessary for organisational effectiveness. Firstly, people must be induced to enter and remain in the organisational system (Azmi et al., 2016; Katz, 1964). Secondly, they must carry out their specific tasks in a dependable manner (Azmi et al., 2016; Katz, 1964). Thirdly, they must be innovative and achieve organisational objectives that go beyond their call of duty (Katz, 1964). The third requirement became a point of departure for the notion of ‘citizenship behaviour’. Dennis Organ and his colleagues (Bateman & Organ, 1983; Smith, Organ & Near, 1983) gave this



behaviour a formal definition. Organisational citizenship behaviour (OCB) is ‘individual behaviour that is discretionary, not directly or explicitly recognised by the formal reward system, and that in the aggregate promotes the effective functioning of the organisation (Organ, 1988, p.4). This definition emphasises three crucial points, namely, a) the behaviour must not be an obligation, b) the behaviour must not fall within the contractual rewards, and c) the behaviour must contribute to organisational effectiveness (Organ, 1997).

Since its inception in the 1980s, this concept has taken different interpretations and dimensions (Organ, 1997; Podsakoff et al., 2000; Williams & Anderson, 1991). Currently, OCB is understood as closely related to contextual performance (Organ, 1997). Contextual performance refers to the activities that promote organisational effectiveness and enhance a positive organisational climate, such as helping others, following organisational rules and regulations, endorsing organisational objectives and volunteering to carry out activities that are not part of job specification (Borman & Motowidlo, 2014; Motowidlo et al., 1997). While the similarities between these two concepts are conspicuous, there is a lack of consensus regarding the dimensions of OCB. Smith et al. (1983) initially reported two dimensions, which included altruism or helping behaviour and generalised compliance, which refers to an impersonal form of organisational behaviour.

In 1988, Organ expanded these dimensions into five categories, i.e. *altruism*- which is about helping other employees; *conscientiousness*- which is about giving more time to the organisation and contributing beyond formal duties; *sportsmanship*- refers to focusing on the work and tolerating unavoidable work inconveniences without complaining; *courtesy*- which is about gestures that are aimed to prevent work-related problems; *civic virtue*- which refers to the behaviours that promote the broader organisation, such as participating in essential organisational functions (Organ, 1988; Podsakoff et al., 1990).

Based on Organ's (1988) conceptualisation, Williams and Anderson (1991) suggested that OCB can be categorised into two broad dimensions: OCB-I- which involves voluntary behaviours that directly benefit individuals, and OCB-O, which involves voluntary behaviours that directly benefit individuals' voluntary behaviours that benefits the organisation as a whole. On the other hand, Podsakoff et al. (2000) reported seven common OCB facets; namely, i) *helping behaviour*- this includes all the concepts such as altruism, which means voluntarily helping others; ii) *sportsmanship*; iii) *organisational loyalty*- this is about protecting and upholding the organisation's objectives; iv) *organisational compliance*- this refers to the internalisation of the organisational rules, regulations and procedures; v) *individual initiative* – involves performing tasks that are beyond the formally required duties; vi) *civic virtue*; vii) *self-development* – includes voluntary activities that employees undertake to improve their knowledge, skills and abilities (Podsakoff et al., 2000).

Although the dimensionality of OCB is questionable, the core meaning of this concept is generally similar. In this thesis, Organ's (1988) multidimensional nature of OCB is adopted. As mentioned previously, Organ (1988) posits that OCB is best defined by altruism, conscientiousness, sportsmanship, courtesy and civic virtue. These are the widely used and well-researched dimensions of OCB (Chahal & Mehta, 2010). These are presented in Figure 2.1. below.

**Figure 2.1**

*Five dimensions of OCB (adapted from Podsakoff et al., 1990)*



### **2.2.2. Work Engagement**

The concept of work engagement has received a considerable amount of attention from the research community. This term was initially conceptualised by Kahn (1990, p.694), who defined it as the “harnessing of the organisation members’ selves in their work roles”. In essence, it is the full involvement of an individual in their job role (Kahn, 1990). He further stated that engaged people apply themselves physically, cognitively, and emotionally in their roles (Kahn, 1990). The popularity of work engagement in the research community and organisations has resulted in many interpretations. Some define it as job satisfaction, organisational commitment, job involvement, and even organisational citizenship behaviour (Bakker et al., 2011; Macey & Schneider, 2008). However, proponents argue that work engagement is a distinct psychological construct that goes beyond the function of these constructs (Bakker et al., 2011).

There are currently two main interpretations of work engagement. The first one is provided by Maslach and Leiter (1997), who viewed engagement as antithetical to burnout. They argued that whilst engagement is characterised by energy, involvement, and efficacy, burnout is characterised by cynicism, exhaustion and ineffectiveness (Maslach & Lieter, 1997; Schuafeli & Bakker, 2004). The second view, which is adopted in this thesis, considers work engagement as an independent construct that is negatively related to burnout (Bakker et al., 2008). According to this view, work engagement is “a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption” (Schaufeli et al., 2002, p. 74). This definition is suggestive of the experience of a positive affective state and the experience of energy which leads to positive outcomes (Green et al., 2017).

Vigour is characterised by high levels of energy, resilience and a focus on one’s work even when experiencing difficulties (Bakker, 2011; Schaufeli, 2012). Dedication is characterised by being strongly involved in one’s work whilst feeling a sense of enthusiasm, inspiration and significance (Schaufeli, 2012; Schaufeli et al., 2006). Lastly, absorption refers to being fully immersed in one’s work, whereby time passes quickly (Schaufeli & Bakker, 2004; Schuafeli, 2012).

### **2.3. The Importance of OCB and Work Engagement in Educational Context**

Despite increasing attention on OCB, research in educational settings is still unsatisfactory (Oplakta & Stundi, 2011; Sesen & Basim, 2012, Somech, 2016). DiPaola & Tschannen-Moran (2001) contends that the study of OCB in the educational contexts is vital to delineate all desirable behaviours necessary for effectiveness in this environment. Teachers who exhibit OCB are said to voluntarily help students and colleagues, put forward constructive and innovative ideas, work collaboratively with colleagues and engage in

professional development activities (DiPoala & Hoy, 2005). Thus, these teachers are more dedicated to their work and go over and above to assist their students and colleagues, without any obligations or expectations of rewards.

It is conceivable that OCB can result in positive consequences in schools, as witnessed in business contexts. It is necessary for the teachers to engage in citizenship behaviours to ensure the school's effectiveness (Yuen Onn et al., 2018; Selamat et al., 2016). It was reported in the literature that teacher OCB has a direct influence on student learning, academic success, school efficiency, and overall positive school environment (Choong et al., 2019; DiPaola & Hoy, 2005; Selamat et al., 2016; Somech, 2016). Several studies support this claim. Jurewicz (2004) used the Virginia Standards of Learning (SOL) assessments to investigate the relationship between student achievement and teacher OCB. Results revealed a moderate and positive relationship for English SOL ( $r = .35$ ) and Math SOL ( $r = .35$ ).

Similarly, DiPaola and Hoy (2005) investigated the role of OCB on student achievement in high schools situated in Ohio. Results indicated that teacher OCB positively affects student achievement in mathematics and reading (DiPaola & Hoy, 2005). These results were supported by Jackson (2009). His findings indicated that OCB is positively related to SOL components, i.e. Math and Reading for grades 3 and 5 (Jackson, 2009). On the same corollary, Burns and DiPoala (2013) investigated a relationship between teacher OCB and student achievement. Four components of the SOL were measured, which included Biology; U.S History; English Reading; and English Writing (Burns & DiPoala, 2013). Results revealed that OCB has a positive effect on student achievement in areas of Biology ( $r = .57$ ), Reading ( $r = .48$ ), and Writing ( $r = .39$ ). These findings suggest that OCB plays a significant role in educational settings.

Moreover, the positive role of work engagement in educational contexts has been confirmed in several studies. Research demonstrates that engaged teachers are highly

motivated, energetic, knowledgeable, enthusiastic about teaching, committed, and can cope with job demands (Burić & Macuka, 2018; Guthrie & Dreher, 2000; Klassen et al., 2012). This translates into positive outcomes. For instance, Bakker and Bal (2010) conducted a study on work engagement and job performance among beginning teachers. Results showed that engagement is a significant predictor of job performance (Bakker & Bal, 2010). In addition, research studies reveal that teacher work engagement influences organisational commitment and job satisfaction (Granziera & Perera, 2019; Hakanen et al., 2006; Yin et al., 2017). Work engagement enables teachers to be focused and work towards their goals, which subsequently influences their commitment and feelings about their work (Granziera & Perera, 2019; Hanaken et al., 2006).

Some studies demonstrate that some aspects of work engagement promote teacher self-efficacy. A study by Minghui et al. (2018) found that vigour significantly predicts teacher self-efficacy. This suggests that teachers with high, positive energy and mental resilience tend to have positive beliefs about their capabilities (Minghui et al., 2018). Undoubtedly, this might result in effective and quality student learning (Burić & Macuka, 2018).

#### **2.4. OCB and work engagement as Positive Psychology constructs**

Research in OCB has spun in a different direction, where some researchers are questioning if OCB is a positive psychology construct (Bolino et al., 2013; Koopman et al., 2016). In fact, Bolino et al. (2004) asserted that employees engage in OCBs because of self-serving motives and for them to be perceived as more favourable than their co-workers. According to the critics of OCB, these acts can be detrimental to the individual. Bolino et al. (2015) spoke of citizenship fatigue. This phenomenon occurs when employees feel worn out as a result of engaging in OCB (Bolino et al., 2015). Consequently, OCB may result in

emotional exhaustion, which might have a negative impact on well-being (Koopman et al., 2016). Research on the unintended consequences of OCB warrants more empirical studies to test these claims. Despite these arguments, substantial evidence supports the notion that OCB is a positive behaviour that needs to be studied under the positive psychology movement (Luthans & Yousseff, 2007).

Several studies reveal that OCB significantly predict positive emotions and well-being (Baranik & Eby, 2016; Glomb et al., 2011; Koopman et al., 2016; Sonnentag & Grant, 2012). These findings are theoretically expected. Helping others may provide an individual with a sense of purpose which may, in turn, generate positive moods and build a strong sense of competence (Sonnentag & Grant, 2012). It is plausible that helping behaviours contribute to positive environments with good interpersonal relations and psychological well-being. Indeed, Rastogi and Garg (2011) found that OCB significantly predicts psychological well-being, which subsequently leads to employee life satisfaction. Research also shows that OCB is positively related to other positive outcomes such as job satisfaction and organisational commitment (Barzoki & Ghujali, 2013; Lee et al., 2013; Zeinabadi, 2010). To this effect, OCB can be considered a positive behaviour that leads to positive consequences.

The notion of work engagement as a positive psychology construct seems to be less disputable. As noted previously, work engagement is defined as a positive, fulfilling, work-related well-being that is characterised by high levels of positive energy (Bakker et al., 2008). As a result, this concept has been said to contribute to positive outcomes that subsequently lead to individual well-being and overall organisational effectiveness (Schaufeli, 2012). Empirical studies confirm a strong positive link between work engagement, positive emotions and well-being and a negative association between work engagement and negative emotions (Burke et al., 2009; Halbesleben, 2010; Kanste, 2011; Malinowski & Lim, 2015; Moreira-Fontán et al., 2019; Radic et al., 2020; Tesi et al., 2019). Moreover, as previously highlighted,

a literature review reveals that work engagement culminates in other positive consequences such as job satisfaction, organisational commitment and positive behaviours (Halbesleben, 2010; Simbula & Guglielmi, 2013).

Generally, both OCB and work engagement are ingrained in the positive psychology domain. The positive consequences associated with these concepts suggest a need to develop and cultivate them. This is especially true in educational contexts, characterised by high job demands (Hakanen et al., 2006). However, there remain questions about whether work engagement and citizenship behaviours can be developed (Schaufeli & Salanova, 2007; Yadav and Punia, 2013). One way to understand this phenomenon is by firstly understanding constructs that are likely to be antecedents of OCB and work engagement. The following section (i.e., Section 2.5.) provides a rationale for EI and implicit theories as predictors of OCB and work engagement.

## **2.5. Emotional Intelligence (EI) and Implicit Theories as Predictors of OCB and Work Engagement**

### **2.5.1. EI and Implicit Theories as Predictors of OCB**

Research on OCB primarily focuses on the antecedents. A review of literature emphasises job satisfaction, organisational commitment, organisational justice, personality characteristics, transformational leadership and leader-member exchange as core antecedents of OCB (Emami et al., 2012; Iqbal et al., 2012; Lee et al., 2013; López-Domínguez et al., 2013; Najafi et al., 2011; Newman et al., 2017; Lv et al., 2012; Zeinabadi, 2010). There seems to be a lack of research on the role of other individual characteristics, such as EI and mindsets or implicit theories.



### ***Emotional Intelligence & OCB***

According to Carmeli and Josman (2006), EI is a powerful tool that could be employed to facilitate prosocial behaviour, such as OCB. Nevertheless, the relationship between EI and OCB seems to be more theoretical rather than empirical. The existing literature has not thoroughly investigated this relationship (Carmeli & Josman, 2006). There are sound reasons why EI may be related to OCB (Abraham, 1999). Individuals high in EI are more likely to engage in positive behaviours such as assisting co-workers, responding more empathetically to their issues and effectively regulating emotions to strive in challenging situations (Abraham, 1999). EI consists of understanding one's and others' emotions (Salovey & Mayer, 1990). Thus, individuals high in EI are likely to understand others' emotional needs and respond accordingly (Turnipseed & Vandewaa, 2012).

Furthermore, these employees may go above and beyond formal duties to assist others with their personal or professional duties (Day & Carroll, 2004). Cohen and Abedallah (2015) asserted that EI might enhance employee loyalty, thus enabling them to act in ways that benefit the organisation's vision and goals. This might provide an impetus for teamwork which can build an atmosphere of collaboration for the benefit of individuals and the organisation (Yadav & Punia, 2016). Several studies demonstrate a positive association between EI and OCB. Carmeli (2003) examined the role of EI on altruistic behaviour, a part of OCB, among senior managers. Results revealed that there was a significant positive relationship between EI and altruistic behaviour, which means that managers with high EI tend to assist their subordinates and colleagues beyond the call of duty (Carmeli, 2003).

Similarly, Carmeli and Josman (2006) investigated the role of EI on work outcomes, including OCB. Findings revealed that all EI dimensions were positively correlated with altruistic behaviour, and only two EI dimensions (i.e. regulating emotions and using emotions) were positively correlated with general compliance or helping behaviour directed at the whole

organisation (Carmeli & Josman, 2006). This suggests that the influence of EI may be stronger for altruistic behaviour. Although the aforementioned studies provide a basis for the study of EI and OCB, they did not consider the multifaceted nature of the OCB concept.

Yunus et al. (2010) investigated the impact of EI on employees' OCB. They used the Wong and Law measurement of EI, depicting self-emotions appraisal; other's emotions appraisal, use of emotions and regulation of emotions; and the OCB scale depicting altruism, conscientiousness, sportsmanship and civic virtue (Yunus et al., 2010). Findings revealed that all EI subscales are positively related to citizenship behaviours, except sportsmanship, which was unrelated to either of the EI subscales (Yunus et al., 2010). Results on the hierarchical models revealed some interesting results. It was found that only the use of emotions, other's emotions appraisal and regulation of emotion EI subscales predicted employee OCB (Yunus et al., 2010). These findings are theoretically expected as individuals who understand others' emotions and who can effectively manage and use their emotions tend to build positive relationships with others, which may subsequently result in prosocial acts (Turnipseed, 2018; Turnipseed & Vandewaa, 2012).

It is worth noting that the finding illustrating the non-significance of other EI subscales is not uncommon in the study of EI and OCB. This may give an indication that some EI dimensions are more influential for OCB in specific contexts. Several studies substantiate this notion (Santos et al., 2018; Turnipseed & Vandewaa, 2012; Turnipseed, 2018). For instance, a study by Cohen and Abedallah (2015) examined the relationship between EI and OCB among teachers. Results revealed that only the regulation of emotion EI subscale is the strong predictor for both citizenship behaviour directed at individuals and the one directed at the organisation. The nature of the education context can explain these findings. Teaching is a service profession that requires effective emotion management skills (Hargreaves, 1998).

Thus, the need to regulate emotions is more pronounced, which may guide teachers to exert more helping behaviour (Miao et al., 2017).

From a different angle, Florescu & Nastase (2014) conducted a study to investigate the relationship between managers' EI and the OCB of employees. Their findings showed that the EI of managers had positive effects on employee OCB, which was depicted by altruism, courtesy, conscientiousness and civic virtue (Florescu & Nastase, 2014). Overall, these findings demonstrate that EI dimensions are significant for OCB especially for altruistic behaviour, which is found to be more strongly related to EI than other OCB dimensions (e.g. Carmeli & Josman, 2006; Yunus et al., 2010).

### ***Implicit Theories & OCB***

The relationship between implicit theories and OCB seems to have been ignored in the existing literature. However, there are strong reasons why these variables may be related. According to Dweck (2012), people with a fixed mindset believe that their attributes are fixed and cannot be improved through effort and persistence. These individuals tend to avoid challenges and spend their time proving their capabilities rather than learning new things (Dweck & Leggett, 1988). On the other hand, those who hold an incremental theory or a growth mindset tend to believe their abilities are malleable and can be improved (Dweck, 2012). These individuals are more concerned with their personal development and may take on challenging tasks to learn and grow (Dweck & Leggett, 1988; Dweck, 2012). These beliefs also affect how individuals perceive and view others (Dweck et al., 1995). Entity theorists tend to make perceptions of others based on other people's traits, whilst incremental theorists tend to focus more on the other person's potential and may provide guidance or education to curb negative behaviours (Dweck et al., 1995).

Therefore, incremental theorists are more likely to engage in helping behaviour because they emphasise potential and effort. They may go beyond their formal duties to assist their co-workers. One study by Özduran and Tanova (2017) confirmed this claim. Their research focused on the role of the manager's mindsets (i.e. fixed or growth mindset) on the OCBs of employees. Their findings revealed a significant positive relationship between the incremental theory of managers and the altruistic and conscientious behaviour of the subordinates (Özduran & Tanova, 2017). This demonstrates that incremental theorists may assist their co-workers and behave in ways that may benefit the organisation. More empirical studies are needed to explore this relationship to better understand implicit theories' role in organisational outcomes, such as OCB.

### **2.5.2. EI and Implicit Theories as Predictors of Work Engagement**

Research shows that work engagement is predicted by different significant job and personal resources (Bakker & Demerouti, 2008, 2017; Halbesleben, 2010). Job resources such as social support from colleagues refer to the physical, psychological, or organisational factors that support the effective achievement of work goals (Bakker & Demerouti, 2008; Demerouti et al., 2001). On the other hand, personal resources refer to essential individual aspects that are important for dealing with stressful and challenging circumstances, thus building resilience (Hobfoll et al., 2003; Xanthopoulou et al., 2009). Research in this field largely focuses on job resources and only concentrates on a few personal resources such as self-efficacy and optimism (Bakker & Albrecht, 2018; Bakker et al., 2011; Halbesleben, 2010). To this effect, research expanding on the relationship between work engagement and other potential personal resources such as EI and implicit theories is most notable.

### *Emotional Intelligence (EI) as a personal resource*

Although research on EI and work engagement is growing, the association between these constructs is still under-explored (Barreiro & Treglown, 2020). Individuals high in EI are able to regulate their emotions, which might result in a positive state of mind (Salovey & Mayer, 1990). Several studies support this notion. In the IT industry, De Clercq et al. (2014) investigated the relationship between EI and work engagement. As measured by the WLEIS, EI was reported as a significant, positive predictor of work engagement (De Clercq et al., 2014). A study on Spanish professionals also demonstrated a positive relationship between EI and work engagement dimensions (Extremera et al., 2018). Findings from this study indicated a moderate, positive association between the WLEIS and engagement dimensions i.e. vigour ( $r = .46$ ); dedication ( $r = .38$ ); absorption ( $r = .33$ ) (Extremera et al., 2018).

Studies using nurses as samples also report a positive influence of EI on work engagement. For instance, Zhu et al. (2015) investigated the relationship between EI and work engagement among Chinese nurses. Results showed that EI is a significant predictor of work engagement (Zhu et al., 2015). Similarly, Yan et al. (2018) reported positive relationships between EI dimensions and work engagement i.e. SEA ( $r = .24$ ); OEA ( $r = .28$ ); UOE ( $r = .50$ ) and ROE ( $r = .39$ ). Furthermore, this relationship has also been studied in the education field (Mérida-López, et al., 2019; Mérida-López, et al., 2020). Mérida-López et al. (2017) studied the association between EI and work engagement among 288 teachers. Results revealed a moderate, positive relationship between the two constructs ( $r = .4$ ) (Mérida-López et al., 2017). These findings were substantiated by a recent study by Mérida-López et al. (2020). Results demonstrated a moderate, positive relationship between EI and work engagement ( $r = .43$ ).

Most studies mentioned above only report total EI, disregarding the influence of each EI dimension. Some studies indicate that the strength of influence among EI dimensions is different. D'Amico et al. (2020) and Mukaihata et al. (2020) reveal that only others' emotions

and use of emotions predict work engagement among the four EI dimensions. The influence of EI on work engagement has also been reported by trait EI studies, which indicate that EI, defined either as a trait or ability, has a significant role in engagement (Akhtar et al., 2015; Barreiro & Treglown, 2020).

### ***Implicit Theories as a Personal Resource***

Keating and Helsin (2015) delineated strong reasons why implicit theories may be related to work engagement. They argued that incremental theorists or individuals with a growth mindset tend to be more concerned with self-development and apply more effort towards their work, which may positively influence work engagement (Keating & Helsin, 2015). Therefore, theoretically speaking, incremental theorists are more expected to be more engaged, as engaged people apply vigorous effort and devote high focus to their work (Keating & Helsin, 2015; Heslin, 2010).

Empirical studies reveal a positive association between implicit theories and work engagement (Aronson et al., 2002; Zeng et al., 2019). For instance, Zeng (2019) and her colleagues examined the relationship between teacher mindsets and work engagement. Findings revealed a positive relationship between the two variables, confirming a growth mindset's positive role in perpetuating high levels of engagement. Other studies demonstrate an alternative association. Caniëls et al. (2018) investigated the role of proactive personality, transformational leadership and growth mindset on work engagement among 259 employees. Correlation analysis results showed a non-significant relationship between mindsets and work engagement (Caniëls et al., 2018). Nevertheless, the results further indicated that transformational leadership positively impacted work engagement only when individuals had a growth mindset (Caniëls et al., 2018). These results suggest that implicit theories may indirectly influence engagement through other positive variables. All in all, a paucity of research linking these constructs indicate a need for further investigation.

## **2.6. Proposed Direct and Indirect Interactions**

A literature review on implicit theories and EI presented in Chapter 1 indicates that these constructs contribute to positive outcomes. Thus, it is likely that these constructs may positively predict citizenship behaviours and work engagement. In fact, a review provided in this chapter indicates that both EI and implicit theories significantly predict OCB and work engagement, although this body of research is sparse. Given these findings, it is expected that citizenship behaviours and work engagement would be cultivated through the training and development of EI and an incremental theory.

Furthermore, the associations between these variables could also be explained through indirect effects. In this chapter, the relationship between implicit theories and outcomes (i.e. OCB and work engagement) was primarily based on theory rather than empirical evidence. Whilst the direct effect of implicit theories on outcomes could be envisaged, alternative pathways must not be ruled out. It is proposed that EI could be a beneficial mechanism between implicit theories and study outcomes. There is substantial evidence that reveals that associations between some positive constructs can be explained by EI (Callea et al., 2019; Perreault et al., 2014). For example, Schutte and Malouff (2011) reported that EI mediates the relationship between mindfulness and subjective well-being. On the same note, Wang and Kong (2014) demonstrated that EI mediates the relationship between mindfulness and life satisfaction. Theoretically speaking, implicit theories and, more specifically, implicit theories of intelligence and emotion may positively influence EI abilities (i.e., due to domain-specificity), which may affect positive outcomes in the form of citizenship behaviours and work engagement.

In addition, there is a possibility of EI buffering the adverse effects of an entity theory on outcomes. In Chapter 1, a literature review on implicit theories indicated that adopting a fixed mindset or a view that personal qualities are not amenable to change results in negative

consequences. To this effect, EI could buffer the negative impact of an entity theory on OCB and work engagement whilst strengthening the positive relationship between an incremental theory and study outcomes. This postulated interaction is conceivable given the role of EI in mitigating the effects of negative consequences and increasing positive associations between positive constructs (Abdollahi et al., 2019; Gao et al., 2013; Mahon et al., 2014).

## **2.7. Research Objectives, Questions and Hypotheses**

A literature review on implicit theories, EI, OCB, and work engagement reveals that more research is needed. The positive consequences of implicit theories and EI in education settings are apparent, yet there is a lack of studies investigating the possible link between these variables. One study by Cabello and Fernández-Berrocal (2015) demonstrated implicit theories of emotion as a positive predictor of EI. These findings signal vital implications for the training and development of EI. Information about the malleability of emotions needs to be included in EI training programmes to strengthen the positive effects of such interventions (Cabello and Fernández-Berrocal, 2015).

Furthermore, research reveals that OCB and work engagement are positive outcomes, which are vital in educational contexts. Nevertheless, there seems to be a lack of studies investigating the effects of EI and implicit theories on these variables. In fact, questions remain about whether these positive behaviours can be cultivated (Schaufeli & Salanova, 2007; Yadav & Punia, 2013). In addition, as presented in the literature reviews, most existing studies are correlational and thus cannot determine the causal associations between variables (Altman & Krzywinski, 2015).

To this effect, this thesis aims to develop, evaluate and examine the effects of an intervention based on mindsets and EI. The main aim of this intervention is to enhance



preservice teachers' (PSTs) EI and shift their mindsets to facilitate positive change in the form of engagement and citizenship behaviour. This is vital for PSTs because they are most vulnerable to stressors and are still constructing their teacher identity (Vesely et al., 2014). To the best of the researcher's knowledge, this is the first research inquiry to develop and examine the effects of such a training programme. Thus, this thesis contributes to the body of knowledge in the most novel way. Moreover, longitudinal data is used in this thesis to determine the causal associations between variables, unlike in correlational studies that were observed in the reviews. This kind of data will enable the researcher to determine changes in variables over time whilst observing the sequence of changes (Sánchez-Álvarez et al., 2015). For instance, with this data, we can be able to investigate whether an increase in EI and implicit theories can be followed by an increase in OCB and work engagement.

In order to achieve the aforementioned research objectives, this thesis consists of the following ten research questions. These questions are addressed in four empirical studies.

#### Study 1: Pilot Study

As this thesis aimed to develop and examine the effects of a Growth Mindset and Emotional Intelligence (GMEI) intervention, it was paramount to conduct a pilot study to understand this intervention's impact and investigate the overall feasibility of the study. Thus, the first objective of this study is to understand the impact of a pilot GMEI intervention on preservice teachers' EI, mindsets, OCB and work engagement.

1. ***Research Question One:*** How does participation in a pilot GMEI intervention affect preservice teachers' emotional intelligence, mindsets, organisational citizenship behaviour and work engagement?

### Study 2: Investigating the Psychometric Properties of the Main Instruments

Measurements used in this study were not developed in South Africa. Thus, it is essential to investigate the psychometric properties of these scales to demonstrate their reliability. The second objective of this thesis is to understand the psychometric properties of the main instruments.

2. **Research Question Two:** What are the psychometric properties of the six main instruments used?

### Study 3: The Impact and Process Evaluation of the GMEI

This thesis also aimed to investigate the impact and implementation of the GMEI intervention.

3. **Research Question Three:** How does participation in a brief GMEI intervention affect preservice teachers' emotional intelligence, mindsets, organisational citizenship behaviour, and engagement compared to a comparison group?

4. **Research Question Four:** What are preservice teachers' perceptions of the GMEI?

5. **Research Question Five:** What are the barriers to implementing the GMEI in education contexts?

### Study 4: Direct and Indirect Relationships between Implicit Theories, Emotional Intelligence, Organisational Behaviour Subscales and Work Engagement

This is the fourth objective of the thesis. The aim is to examine the direct and indirect relationship among the study variables.

6. **Research Question Six:** What is the relationship between implicit theories (i.e. implicit theories of intelligence, personality and emotion) and emotional intelligence (i.e. and its subscales)?

7. **Research Question Seven:** What is the relationship between emotional intelligence, organisational citizenship behaviour subscales and work engagement?
8. **Research Question Eight:** What is the relationship between implicit theories, organisational citizenship behaviour subscales and work engagement?
9. **Research Question Nine:** Does emotional intelligence mediate the relationship between implicit theories (i.e., implicit theories of intelligence & implicit theories of emotion) and study outcomes (i.e. organisational citizenship behaviour subscales and work engagement)?
10. **Research Question Ten:** Does emotional intelligence moderate the relationship between implicit theories (i.e. implicit theories of personality) and study outcomes (i.e. organisational citizenship behaviour subscales and work engagement)?

## **2.8. Theoretical Framework: Fredrickson's Broaden-and-Build Theory of Positive Emotions**

The broaden-and-build theory of positive emotions is the framework that can explain this study and the interrelationships between emotional intelligence, mindsets, citizenship behaviour and engagement. This theory was coined by Fredrickson (1998, 2004) and is positioned within the field of positive psychology. It aims to capture the significance and role of positive emotions, a cause that has been neglected in previous studies of emotion (Fredrickson, 2004). The theory ascertains that, like negative emotions, positive emotions shape thoughts and behaviour, although the mechanisms and results differ (Fredrickson, 2004; 2013). Negative emotions such as anger spark impulsive actions (e.g. escape, attack) that are quick and, most often, maladaptive (Fredrickson, 2004). By contrast, positive emotions such as joy and contentment provide individuals with adaptive responses that build into long-lasting resources consequential for health and wellbeing (Fredrickson, 2004).

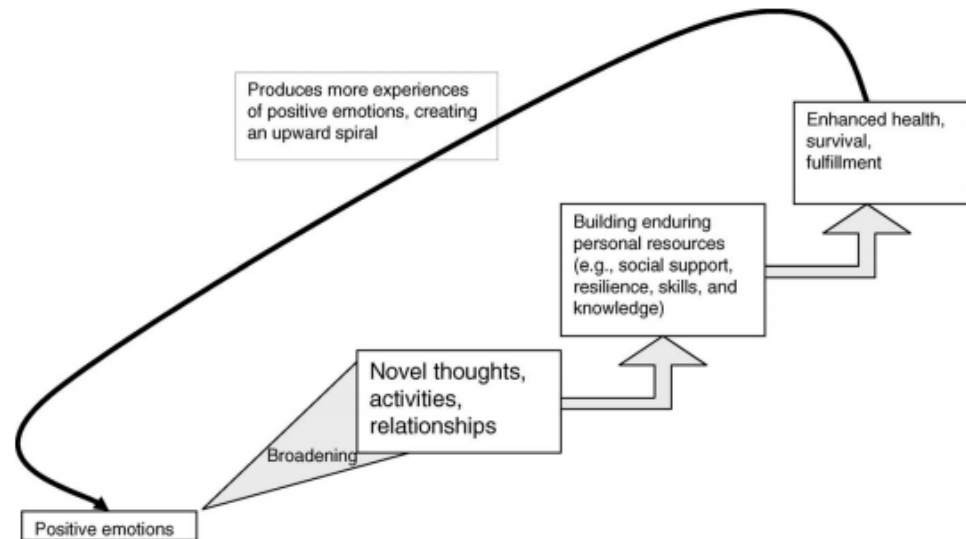
*“Joy, for instance, creates the urge to play, push the limits and be creative; urges evident not only in social and physical behaviour but also in intellectual and artistic behaviour”* (Fredrickson, 2004, p. 1369).

Moreover, two key propositions are underscored by the broaden-and-build theory. The first premise is that positive emotions broaden thought-action tendencies (Fredrickson, 2013). Specifically, positive emotions widen thoughts and influence cognitive changes that subsequently ignite an array of positive, flexible responses (Conway et al., 2013; Fredrickson, 1998; Fredrickson & Cohn, 2008). This is fulfilled in three ways: broadening attentional scope, cognition, and social cognition (Conway et al., 2013; Fredrickson & Cohn, 2008). A large body of research demonstrates that positive emotions enhance attention and cognition, thereby eliciting open, creative, problem-solving oriented and holistic processing of information (Conway et al., 2013; Fredrickson & Branigan, 2005; Fredrickson & Cohn, 2008; Vanlessen et al., 2013). This theory also speaks of social cognition, or how we view and understand ourselves and others (Conway et al., 2013). Positive emotions enable individuals to form positive self-concepts and widen their understanding of others and social relationships (Conway et al., 2013).

The second proposition of this theory is that positive emotions broaden cognitive changes that build long-term psychological, physical and social resources (Conway et al., 2013; Fredrickson & Cohn, 2008; Fredrickson, 2004). Therefore, the experience of positive emotions results in changes that may accumulate over time, leading to positive outcomes. The figure below (i.e., Figure 2.2) indicates the upward spirals generated by positive emotions (Fredrickson & Cohn, 2008). That is, positive emotions build enduring resources that result in adaptive functioning (e.g., wellbeing), consequently leading to future experiences of positive emotions (Fredrickson 2003; Salanova et al., 2010). This reciprocity is evident in this thesis.

**Figure 2.2**

*Upward spirals generated by positive emotions (Source: Fredrickson & Cohn, 2008)*



The argument is that mindsets as a concept under the banner of positive psychology broaden the capabilities of individuals by fostering positive emotions and prosocial behaviour (Rathore et al., 2017; Szczygieł & Mikolajczak, 2017; Tamir et al., 2007; Yeager et al., 2014). Individuals who believe that personal attributes can be developed and improved are likely to cultivate positive behaviours by enhancing their EI abilities. A review of literature positions EI as a crucial personal resource that leads to positive experiences (Brunetto et al., 2012, Fernández-Berrocal & Extremera, 2016; Mérida-López & Extremera, 2017; Sánchez-Álvarez et al., 2016). Therefore, the accumulation of EI abilities could enable individuals to gain personal and social resources, which could drive positive behaviours. That is, EI could foster work engagement, which has been conceptualised as a positive affective-cognitive state and facilitates positive citizenship behaviour (Schaufeli et al., 2002; Carmeli & Josman, 2006).

Furthermore, the accumulation of engagement and citizenship behaviour is also considered a means to an end due to positive outcomes associated with the constructs.

Research indicates that engagement and citizenship behaviour contribute to adaptive outcomes such as increased well-being and high performance (Burke et al., 2009; Halbesleben, 2010; Harper, 2015). Consequently, these outcomes contribute to the long-lasting experience of positive emotions, indicative of gain spirals projected by the broaden-and-build theory.

## **2.9. Chapter Summary**

This chapter dealt with the study outcomes, i.e., organisational citizenship behaviour (OCB) and work engagement. It provided a conceptualisation of these concepts and highlighted their significance in the field of education. These concepts were also positioned within the positive psychology domain. In this chapter, EI and implicit theories were presented as predictors of OCB and work engagement. This chapter also discussed the proposed direct and indirect interactions between all study variables. It further explained the research objectives and questions. This chapter concluded with a theoretical framework that underpins this thesis. The following chapter deals with a brief literature review on EI interventions.

## **CHAPTER 3: EMOTIONAL INTELLIGENCE INTERVENTIONS: A REVIEW OF LITERATURE**

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### **3.1. Overview**

This chapter provides a literature review of emotional intelligence interventions. Only the interventions based on the ability EI model were reviewed. Most studies included in this review were conducted within the education context. Section 3.2. presents a general discussion of EI interventions. Section 3.3. reviews intervention studies that have adopted an ability EI model. This chapter concludes with a summary in Section 3.4.

### **3.2. Emotional Intelligence Interventions**

Research provides plausible evidence that EI is a significant predictor of well-being (Martins et al., 2010; Schutte et al., 2007). For example, a meta-analysis by Martins and his colleagues indicated that EI is positively associated with mental health ( $r = .36$ ), psychosomatic health ( $r = .33$ ) and physical health ( $r = .27$ ) (Martins et al., 2010). These findings have encouraged researchers to embark on the quest for effective ways of increasing and developing EI (Ackley, 2016; Schutte et al., 2013). Programmes aimed to enhance EI have been developed in organisational settings (e.g. Slaski & Cartwright, 2003), educational field (e.g. Schutte & Malouff, 2002), mental health (e.g. Ruiz-Aranda et al., 2012) and even in sports (Crombie et al., 2011). Nevertheless, given the different conceptions of EI (i.e. ability EI, trait EI and mixed models), existing EI interventions take many shapes and forms, depending on the model in which they are grounded.

Previous reviews indicate that several published EI training programmes are based on mixed models of EI, with a few grounded-on ability EI (Groves et al., 2008; Kotsou et al., 2019). For instance, Slaski & Cartwright (2003) developed and implemented an EI

intervention grounded on the mixed model of EI. The study consisted of UK based managers who took part in a 4-day developmental programme. Results revealed an increase in EI as measured by the Bar-On EQ-i post-intervention. Similarly, Jaeger (2003) investigated the effect of an intervention using the Bar-On EQ-i. This study consisted of students registered for the management course in the United States. The EI programme was integrated into the management course, and activities included readings of relevant EI materials, case studies based on EI and feedback on the Bar-On EQ-i. Results revealed an increase in EI scores post-test (Jaeger, 2003). Notwithstanding their contribution to the training and development of EI, these studies are considered to be based on a questionable conceptual model (Groves et al., 2008).

Mixed models of EI include emotional and social competencies as well as other qualities, such as adaptability and self-motivation (Bar-On, 2006). Consequently, training programmes based on these models are too general and often include content not specific to EI abilities (Groves et al., 2008). According to Clarke (2006), EI interventions based on mixed models largely mirror interpersonal or soft skills training, much like old wine packaged in new bottles. Thus, it is significant that EI training programmes be based on a robust conceptual model, such as that of ability EI (Clarke, 2006; Pool & Qualter, 2012). This enables clarity in terms of the methodology, structure, and EI skills to be developed (Groves et al., 2008). In light of this, this review only includes intervention studies that are based on the ability EI. Overall, the intervention studies for this review were chosen using these criteria:

- 1) The content of the intervention is based on the ability EI model
- 2) The use of an EI measure that is based on the ability EI model (i.e. self-report or performance-based)



3) The process and content of the intervention is clearly defined

In total, five intervention studies were chosen for a review. Four of these studies are conducted in the education field (i.e. used university students and teachers as study populations). Due to a lack of intervention studies based on the ability EI, 1 study conducted in non-educational contexts was included for a review (i.e. Clarke, 2010). An overview of one intervention by Brackett and Katulak (2006) was also discussed in this section as it is relevant in educational contexts.

### **3.3. Ability EI interventions**

Groves et al. (2008) developed and carried out an 11-week EI training programme for business students. The intervention included role-playing exercises, reading materials, video clips showing EI abilities, coaching and a journal. Whilst the treatment group was exposed to the EI training programme, the control group participated only in the undergraduate management course without exposure to the study of EI. Results indicated an increase in EI scores in all EI components for the treatment group. There was also a significant difference in EI scores between the treatment and the control group post-intervention. These results suggest that the EI intervention was effective in enhancing emotional intelligence abilities.

Hen and Sharabi-Nov (2014) also demonstrated positive results in an EI intervention study for primary school teachers. The 14-week training programme (56 hours) involved lectures, reflective exercises, group work, reading materials, case studies and a personal diary. Findings of this study demonstrated an increase in EI post-intervention ( $M = 132.08$ ,  $SD = 14.32$ ), compared with EI pre-test ( $M = 129.16$ ,  $SD = 5.40$ ). Results also indicated an increase in all EI subscales. Although this study did not include a comparison group, it provides a basis for developing and implementing EI interventions for educators (Hen & Sharabi-Nov, 2014).

Moreover, some studies reveal that some EI components may be more amenable to EI training than others. Nelis et al. (2009) developed and carried out an EI intervention of four sessions (2 and a half hours each) for psychology students. The programme included short lectures, group discussions, role-plays, readings, and discussions (Nelis et al., 2009). Participants completed the measures three times, i.e. prior to the session, right after the training programme and six months later. Results revealed a significant increase in the regulation of emotions, emotion management and emotion identification subscales. No significant difference was found for the emotional understanding subscale. This study reveals that short interventions could improve some EI abilities. However, despite its contribution to EI training, especially using the ability EI model, this study did not assess all EI dimensions, i.e., using emotion dimension.

Similarly, Pool and Qualter (2012) conducted an EI intervention study for undergraduate students based in England. The EI training programme based on the ability EI was taught as a module and included 11 classes for 2 hours each. The module included short lectures, videos, case studies, group tasks, role-play, discussions, and a visit to an art gallery (Pool & Qualter, 2012). For example, a session on the *managing emotion* dimension included a mini-lecture which explained emotion management, case studies, personal experiences that involved poor emotion management techniques, a reading on emotion management, practical strategies for anger management and role-play exercises (Pool & Qualter, 2012, p.308). Findings indicated a significant difference in scores between the intervention and the control group on the EI dimensions, i.e., *understanding emotion* and *managing emotion*. There was no significant difference in scores on the *perceiving emotion* and *using emotion* EI dimensions (Pool & Qualter, 2012).

These positive findings are also observed in non-educational contexts. Clarke (2010) investigated the impact of a two-day EI training programme on project managers. Participants

were measured at three-time points (i.e., one month prior to the intervention, one month after the intervention and six months post-training). Results showed no significant changes in the perceiving emotion and using emotion EI dimensions. However, there were significant positive changes in the understanding emotions dimension between Time 1 and Time 3 (Clarke, 2010).

The lack of improvement on other EI abilities demonstrated in some studies (i.e. Clarke, 2010; Nelis et al., 2009; Pool & Qualter, 2012) can be explained by several reasons. The first reason is the EI measure employed. These studies used performance-based EI measures (i.e. STEU & the MSCEIT). Performance-based EI measures have received criticisms, such as the contentious scoring system and questionable validity (Austin, 2010; Maul, 2012; Joseph & Newman, 2010). The second reason might be the intervention content and implementation. Research reveals that the examination of the ‘dose received’ is vital in intervention studies (Linnan & Steckler, 2002). This is a component of process evaluation and refers to the extent to which participants actively engaged and used the materials provided during the intervention (Saunders et al., 2005). Therefore, the content and participants’ engagement levels during the sessions might explain a lack of positive results in some EI components. Clarke (2010) also supported this and explained that his results might be due to the insufficient content for the ‘perceiving emotions’ and ‘using emotions’ dimensions. Process evaluation will be further discussed in the methodology chapter (i.e. Chapter 4).

Furthermore, it is worth noting Brackett and Katulak’s (2006) ability EI-based training programme designed specifically for teachers. This one-day workshop aimed to enhance teachers’ EI by providing in-depth knowledge of the four EI abilities (i.e. perceiving emotion, use of emotion, understanding emotion, and managing emotion (Brackett & Katulak, 2006). The activities in this training programme are tailored for each EI dimension. For instance, for the perceiving emotion branch, teachers are asked to provide a description of their events

during the course of a school day. They are then asked to give detail of the events (e.g., what was happening? who was present?), and record emotions they felt during those events, as well as the emotions of those around based on the verbal and nonverbal behaviours they noticed (Brackett & Katulak, 2006). This programme has been implemented in the United States, and feedback from teachers includes improved relationships with all stakeholders, such as parents and students (Brackett & Katulak, 2006).

The reviewed studies demonstrate that EI abilities can be enhanced through training. These studies provide a base for the development of theoretically sound EI interventions. However, this review shows that there is still a lack of EI training programmes based on the ability EI model. Thus, there is a need for intervention studies based on this model.

Moreover, positive results were more ascertained in studies with longer training programmes, for instance, Groves et al. (2008) 11-week training programme and Hen and Sharabi-Nov's (2014) 11-week EI intervention. Although shorter interventions, such as Nelis et al.'s (2009) four sessions (2 and a half hours each) and Clarke's (2010) two-day EI training, provide some valuable results, these shorter training programmes failed to enhance other EI components. Reasons for these results have been already highlighted, including the measurement issues and a need to evaluate the content and participants' engagement levels during the implementation of the programme. Most notably, these findings are suggestive of a need for methods to improve shorter EI interventions. The researcher proposes that brief EI interventions could be coupled with a growth mindset message and evaluation of the programme implementation and participants' engagement levels to understand the impact and process factors that might contribute to the findings of the training programme.

### **3.4. Chapter Summary**

This chapter provided a general overview of EI interventions. It also provided a brief review of the ability EI interventions.

The following chapter presents the research methodology employed

## CHAPTER 4: RESEARCH DESIGN & METHODOLOGY

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### 4.1. Overview

This chapter presents the research methodology utilised in this thesis. Section 4.2. explains the rationale for the mixed-methods design. It also discusses the research paradigm adopted in this thesis. Section 4.3. describes the characteristics of the participants. This includes an explanation of a sampling strategy and a description of the participants in the pilot study and in the main intervention study. Section 4.4. discusses the main instruments used. This includes the main questionnaires, evaluation form and semi-structured interviews. In Section 4.5., data collection procedures are explained. Section 4.6. discusses the data analysis techniques and strategies employed. Section 4.7. discusses ethical considerations. This chapter will conclude with a summary (i.e., Section 4.8.).

### 4.2. The rationale for the research design & methodology

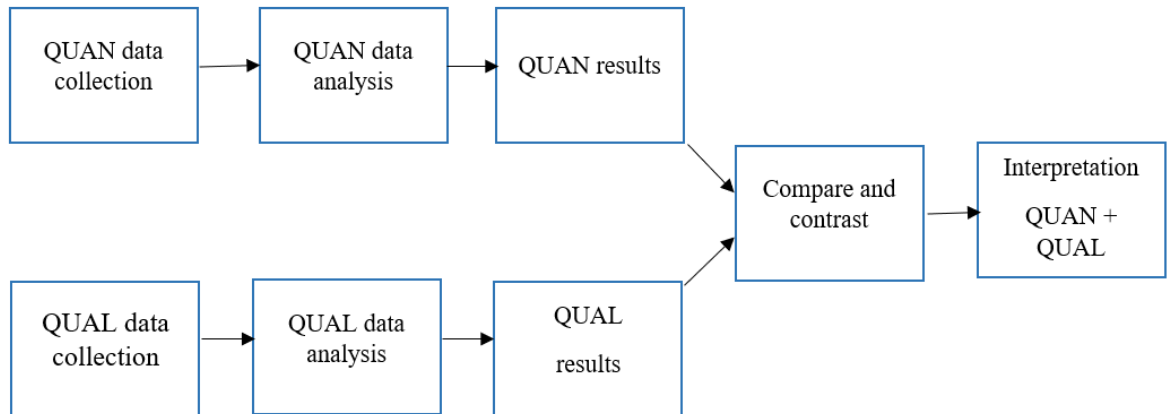
This study adopted a *mixed-methods design*. Mixed methods design refers to a “class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language in a single study” (Johnson & Onwuegbuzie, 2004, p.17). In accordance with this conception, Pluye and Hong (2014, p30) defined mixed methods as “a research approach in which a researcher or team of researchers integrates a) qualitative and quantitative research questions, b) qualitative research methods and quantitative research design, c) techniques for collecting and analysing qualitative and quantitative data, and d) qualitative findings and quantitative results”. In this thesis, both quantitative and qualitative research techniques were employed in the quest for a richer understanding of the phenomenon.

The main goal of mixed methods designs is not to replace traditional quantitative or qualitative research, but it is to best utilise the strengths of these approaches by combining them in one study (Onwuegbuzie & Johnson, 2006). This design was chosen because of its apparent strengths. The mixed-methods design can provide a more profound and broader understanding by drawing from multiple perspectives (Johnson & Onwuegbuzie, 2004). Halcomb and Hickman (2015, p. 41) concurred and argued that “qualitative and quantitative elements are interlinked to provide an integrated response to the research question that is deeper than would be possible by either method alone”. Therefore, it is hoped that this method will provide a deep understanding of the impact of the intervention, perceptions and external factors that affected the implementation of the programme.

A *convergence triangulation mixed methods approach* was used to integrate and interpret research findings. A triangulation design is commonly used and refers to the collection and integration of both qualitative and quantitative data to provide a more robust and complete understanding (Creswell et al., 2003). Choosing an appropriate mixed methods approach is a significant factor that should be driven by specific research questions (Halcomb & Hickman, 2015). This thesis aimed to evaluate the impact of an intervention and explore participants’ perceptions in relation to the intervention. In a convergence triangulation mixed methods design (see Figure 4.1. below), quantitative and qualitative data is collected and analysed separately, and then results are converged or integrated during interpretation (Creswell & Plano Clark, 2007).

**Figure 4.1**

*Triangulation Design: Convergence Model (adapted from Creswell & Plano Clark, 2007)*



Based on the outline construed in Figure 4.1 above, the researcher collected, analysed and presented quantitative and qualitative data separately. Findings were integrated and interpreted concurrently. Creswell (1999) argued that convergence triangulation is best suited for studies aimed to validate, confirm or corroborate results. Consequently, this approach is appropriate for this study as it draws from qualitative and quantitative findings to give meaning to participants' experiences during the intervention.

This research project consisted of three phases. The first phase was the pilot study. The second phase was the implementation of the main intervention. Finally, the third phase was the evaluation of the intervention. This final phase included an evaluation form and semi-structured interviews. These phases are discussed in more detail below.

#### **4.2.1. Pilot Study**

The first phase included the pilot study. The main aim of the pilot study was to provide insights into the effectiveness of the intervention and the overall feasibility of the research study. In the pilot study, the time and content of the intervention, the practicality of the various



measurement points, the time spent to complete questionnaires and the comprehension of the instruments were investigated. The pilot study also allowed for reflection on the recruitment strategies and ways of retaining participants for the duration of the intervention. A detailed discussion of the pilot study will be found in Chapter 5.

#### **4.2.2. Main Intervention Research Study**

Existing research reveals the importance of emotional intelligence and implicit theories in the education field (Anari, 2012; Dweck, 2014; Vesely et al., 2013; Zeng, Hou & Peng, 2016). However, there is a lack of studies investigating the link between these constructs. One study by Cabello and Fernández-Berrocal (2015) revealed a positive association between EI and implicit theories of emotion. The findings of this mentioned study have significant implications for the training and development of EI. In order to strengthen the positive effects of EI training programmes, it may be crucial to include information about mindsets or implicit theories (Cabello & Fernández-Berrocal, 2015). Research also shows that there is a lack of studies investigating the effect of EI and implicit theories on significant positive attitudes and behaviours such as work engagement and citizenship behaviours.

Against this backdrop, this thesis aimed to develop and evaluate the impact of a brief intervention grounded on EI and mindsets. It aimed to explore the effects of this intervention on preservice teachers' EI, mindsets, OCB and work engagement over time. Ideally, an experimental study design can be used to investigate the research aims of this nature. In experiments, independent variables are manipulated, and participants are randomly assigned to different groups, i.e., experiment and control groups (Kirk, 2012). The randomisation feature of this design renders it powerful as it allows for casual connections between variables and reduces bias in the research outcomes (Kirk, 2012; Neuman, 2013). Despite its strengths, experimental designs are sometimes impossible to implement in real-world settings, such as

in the case of the present study (Gravetter & Forzano, 2018). Participation in the present study was solely based on the willingness of participants.

The participants of this study included preservice teachers based in the university setting. As university students, it was noted that their academic schedule is busy, and generally, they would not volunteer and engage in a research project which is not part of their academic curriculum. Based on these constraints, this study adopted a quasi-experimental interrupted time-series (ITS) design (Gravetter & Forzano, 2018). Quasi-experimental designs seek to examine the causal effect of interventions without randomly assigning participants (Boudewijns et al., 2019). Most intervention-based studies take place in real-world social environments where randomisation is infeasible. Due to many constraints, a rise in quasi-experimental designs is observed, especially in educational contexts (Cheung et al., 2019; Piwowar et al., 2013). Although this design is primarily susceptible to internal validity threats, which consist of extraneous factors that may influence the research outcomes, they are considered powerful and appropriate in field settings (Campbell & Stanley, 1963; Price et al., 2015). Consequently, this design was suitable for the present study.

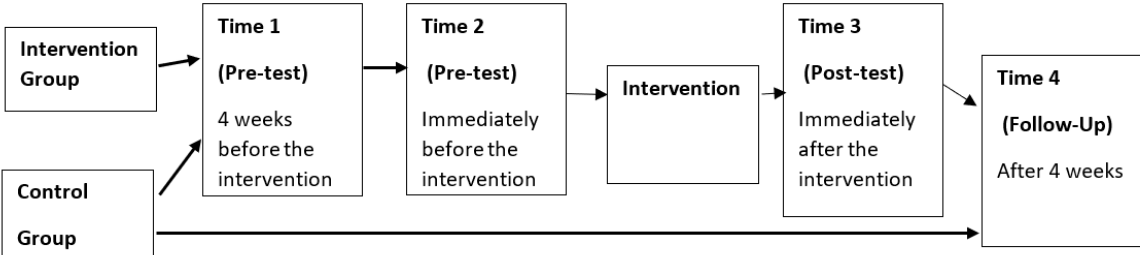
In ITS design, multiple observations or measurements are conducted before and after the training programme. This allows the researcher to statistically test for a change in the outcome in the periods before and after implementing the programme (Penfold & Zhang, 2013). A review of the literature indicates that this is the most robust quasi-experimental approach and is the best alternative to true experimental designs (Hudson et al., 2019; Penfold & Zhang, 2013; Wagner et al., 2002). By employing the ITS, the impact of an intervention can be evaluated in more than one point, increasing the study's internal validity (Rogers & Révész, 2019; Wagner et al., 2002).

The main study consisted of the intervention and the comparison group. Including a comparison group in a quasi-experimental design is instrumental in improving the study's

validity (Handley et al., 2018). The intervention group was made up of participants who completed the intervention, whereas the comparison group was comprised of participants who did not attend the intervention or who only attended the first session and could not complete the intervention due to time clashes. The intervention was measured four times, i.e., Time 1= four weeks before the intervention, Time 2= immediately before the intervention, Time 3= immediately after the intervention and Time 4= four weeks after the intervention. The comparison group was measured only at Time 1 and at Time 4. This design is depicted in Figure 4.2. below.

**Figure 4.2**

*A non-equivalent group interrupted time series design*



Details about the intervention will be discussed in Chapter 6.

**4.2.3. Intervention Evaluation**

The third phase of this research study included intervention evaluation. Training programme evaluation is an essential component in intervention studies (Coetzee et al., 2019). The main purpose of the training evaluation is to determine whether the intervention has met its core objectives (Kirkpatrick & Kirkpatrick, 2016). Although impact evaluations provide clear evidence about the effects of the intervention, it is also worthwhile to evaluate the

process employed in implementing the intervention, which is referred to as process evaluation (Linnan & Steckler, 2002).

Process evaluation has gained popularity in the last decade (Linnan & Steckler, 2002; Oakley, Strange, Bonell, Allen & Stephenson, 2006). According to Nytrø et al. (2000, p. 214), process evaluation is “the individual, collective or management perceptions and actions in implementing any intervention and their influence on the overall result of the intervention”. Thus, it is concerned with participants’ experiences and attitudes towards the intervention. Furthermore, process evaluation focuses more on evaluating factors that drive behavioural change (Randall & Nielsen, 2010). It is argued that process evaluation is needed to increase the quality of intervention research (Randall & Nielsen, 2010). Results from this kind of evaluation can provide information on the aspects of the intervention and how they were delivered (Moore et al., 2015; Taylor et al., 2018). A properly planned evaluation can also explain the success or failure of the intervention by delineating the barriers and facilitators of the intervention in a specific context (Hulscher et al., 2003).

Understanding the mechanisms that have an impact on the successes or failures is key to refining theory and improving intervention effectiveness (Linnan & Steckler, 2002). In addition, Linnan and Steckler (2002) suggest that process evaluation prevents Type III error, which refers to drawing wrong conclusions about the effectiveness of the intervention. Research demonstrates that quasi-experimental studies often lack rigour and reliability (Montano et al., 2014; Randall et al., 2019). These shortcomings may be mitigated by including this evaluation component, which may boost the validity of intervention findings (Cook & Shadish, 1994).

Research provides a plethora of process evaluation frameworks (Linnan & Steckler, 2002; Murta et al., 2007; Saunders et al., 2005). However, this thesis was guided by Nielsen and Randall’s (2013) three-level evaluation framework and Kirkpatrick’s (2013) four-level

model. Unlike other models, these frameworks are most highly recognised and take a broad perspective on training programme evaluation (Havermans et al., 2016; Kirkpatrick & Kirkpatrick, 2016). The three components of Nielsen & Randall's (2013) framework include *organisational context; intervention design and implementation; and mental models* (Nielsen & Randall, 2013; Randall et al., 2019). Organisational context refers to the “situational opportunities and constraints that affect the occurrence and meaning of organisational behaviour and functional relationships between variables” (Johns, 2006, p.386). Factors such as the characteristics of participants, the time and place where the intervention is implemented, and the nature of the setting surrounding participants all influence the implementation and outcomes of the intervention (Nielsen & Abildgaard, 2013).

Furthermore, two types of intervention context are being identified by this framework, i.e. the omnibus and the discrete context (Nielsen & Randall, 2013; Randall et al., 2019). The omnibus context pertains to the overall organisational culture, setting and conditions of the organisation, whereas the discrete context refers to the specific events that may have an impact on the processes of the intervention (Nielsen & Randall, 2013). These two contexts prevail in education contexts. The education field encourages continuous learning. Arguably, this culture might influence enthusiastic participation. On the other hand, factors that may affect effective implementation in the education field include competing demands, lack of time, internal and external pressure to focus on academic attainment, degree of infrastructure and support for intervention activities (Evans et al., 2015; Griffin et al., 2017).

Intervention design and implementation are concerned with the overall programme delivery. It questions whether the intervention was implemented as intended and the quality of the intervention delivery (Randall et al., 2019). The implementation phase also includes the documentation of all the intervention activities from the content and rationale of the intervention, strategies for participant involvement and action plans during the intervention

(Nielsen & Abildgaard, 2013). In their review, Durlak and DuPre (2008) demonstrated that studies that monitored implementation report larger effect sizes. This underscores the importance of the implementation process in intervention outcomes. Accurate interpretation of intervention outcomes largely depends on the aspects of the interventions and how well they were delivered (Durlak & DuPre, 2008). Moreover, this element also involves stakeholders with the power to shape the implementation of intervention activities and participant involvement (Nielsen & Abildgaard, 2013; Randall et al., 2019).

In organisations, top-level managers have the power to shape the implementation of interventions. In their study on the impact of interventions in the service sector, Dahl-Jørgensen and Saksvik (2005) found that managers who were negative and sceptical about the intervention put limitations on the amount of time given to intervention activities. In the education context, administrative support is significant in successfully implementing the programmes (Ransford et al., 2009). Educational interventions must be systematic, supported and well-integrated into the existing culture of the institution (Romasz et al., 2004). This notion is supported by Sheard et al. (2012), who found that several factors, including school-based coordinators, facilitated their programme's success.

In addition, mental models is the third concept from Nielsen and Randall's (2013) framework. Mental models shape behaviour and thoughts (Nielsen & Randall, 2013). They determine participants' reactions to the intervention and its activities (Nielsen & Abildgaard, 2013). Thus, they influence the behaviour and perceptions of participants. Nielsen and Randall (2013) argue that if participants are not convinced of the intervention's importance, their engagement and satisfaction levels will be low. Most importantly, this element questions whether the intervention brought about change in participants' models, that is, behaviours and attitudes (Nielsen & Randall, 2013).

Neilsen and Randall's (2013) notion of mental models is in line with Kirkpatrick's (2013) four levels of training evaluation. Kirkpatrick's (2013) model consists of four components which include the *reaction level* (i.e. measures participants' reactions to the programme); *learning level* (i.e. the extent to which participants learn and improve their knowledge and skills after attending the programme); *behaviour level* (i.e. the extent to which participants change behaviour as a result of the training programme); *results level* (i.e. refers to outcomes or results occurring because participants attended the programme) (Dewi & Kartowagiran, 2018, Kirkpatrick & Kirkpatrick, 2006). Behavioural change is an essential indicator of intervention effectiveness, however, how participants react to the intervention can have a significant impact on their engagement levels. Participants' reactions determine their willingness to learn and apply the skills they acquire during the training programme.

Research also posits that participants' reactions and engagement is associated with positive programme outcomes (Schoenfelder et al., 2013; Schultes et al., 2015). Pereira and Marques-Pinto (2017) investigated the role of participant responsiveness in the implementation of social and emotional learning programmes. They found that high satisfaction contributed to high to medium completion of programme homework (Pereira & Marques-Pinto, 2017). Similarly, Schultes et al. (2015) found that participant responsiveness was associated with participant engagement and positive behavioural outcomes.

It is apparent that intervention evaluation is essential in intervention-based research studies. The researcher anticipates that findings emanating from this evaluation will be crucial for practitioners in the education field. Results could assist in identifying barriers arising from implementing interventions in the education context. To this effect, results could strengthen future development and implementation of educational interventions. Figure 4.3 and 4.4 below depicts Nielsen and Randall's (2013) three-level evaluation framework and Kirkpatrick's (2013) four levels of training evaluation.

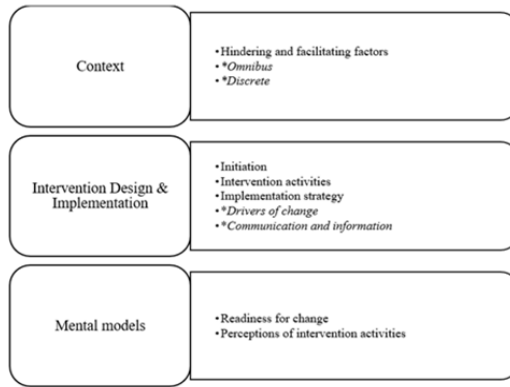


Figure 4.3: Three-level evaluation framework (Adapted from Neilsen & Randall, 2013)

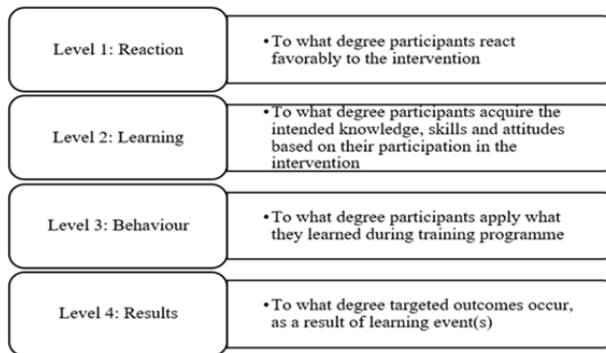


Figure 4.4: Four Level evaluation model (Adapted from Kirkpatrick & Kirkpatrick, 2013)

To understand the experiences and perceptions of participants regarding the intervention, qualitative and quantitative approaches were used. The combination of qualitative and quantitative methods in evaluation studies assists researchers in understanding the effectiveness of interventions and other contextual factors affecting the implementation (Nielsen et al., 2010). The data collection instruments used included questionnaires and semi-structured interviews, which will be discussed later.



#### **4.2.4. Research Paradigm- Post-positivism (Critical Realism)**

This research study is based on post-positivism research philosophical ideas. Postpositivism seeks to blend the ideas of interpretivism and positivism by capitalising on their strengths (Panhwar et al., 2017). It does not reject the scientific, logical claims of positivism, however, it also recognises the significant role of social meanings and human subjectivity (Henderson, 2011). This research paradigm claims that reality exists and is external to humans, but it cannot be perfectly and objectively apprehended because of its complexity and the impact of external social factors (Guba & Lincoln, 1994; Howell, 2013). This research adopted critical realism (CR), a form of postpositivism that argues that reality must be critically analysed to thoroughly understand its meaning (Guba & Lincoln, 1994; Racher & Robinson, 2003). Critical realists maintain that our understanding of the world through empirical research is fallible (Easton, 2010). This is because reality is subject to interpretation and depends mainly on the context (Ryan, 2019). In simple terms, one cannot objectively study a phenomenon without taking into consideration the environmental factors that affect the outcomes.

Moreover, it must be emphasised that CR does not entirely reject objectivity but rather appreciates multiple interpretations of what is to be termed as 'reality' (Ryan, 2019). Therefore, in order to get closer to the 'truth', hybrid research methods of acquiring knowledge must be employed (Racher & Robinson, 2003). In this sense, post-positivism, and more specifically, the CR approach, is appropriate for this study as it sought to understand the intervention's impact and the participants' overall experiences during the intervention. A quantitative approach was employed to understand the effects of an intervention where standard guidelines were followed, and outcome variables were systematically measured with questionnaires (Neuman & Robson, 2014). This approach is driven by objectivity, causes and effects and statistical tests of variables (Creswell, 2003, as cited in Bahari, 2010). Whilst this

method is appropriate for examining the impact of the intervention, the researcher acknowledges the role of contextual factors and the active role of participants in the research process, which can be discerned through their subjective experiences.

Consequently, participants' perceptions were understood qualitatively, where the focus was on shared views (Neuman & Robson, 2014). Furthermore, CR applied in intervention studies can explain different mechanisms and components that can affect the outcomes of the intervention (Ryan, 2019; Sturgiss & Clark, 2020). It combines these research approaches to describe what works well during the intervention and uncovers the elements that act as barriers (Ryan, 2019). The use of both quantitative and qualitative paradigms in this research sought to provide a holistic understanding of the multifaceted phenomena (Hmelo-Silver, 2003). In fact, the inclusion of an evaluation component allowed the researcher to critically reflect on the role of contextual factors during the intervention process.

In summary, this research used a mixed-method approach to answer research questions. As part of the first phase, a pilot study was conducted to investigate the feasibility of the intervention study. For the main intervention study, a quasi-experimental design was adopted. Questionnaires were used to measure participants at different time points. An intervention evaluation component was also included in the study. Data was collected through the use of a feedback questionnaire and a semi-structured interview. This study adopted a critical realism, post-positivistic philosophical stance. In adopting this philosophy, both qualitative/interpretivistic and quantitative/positivistic ideas were employed. The use of multiple methods in this study allowed for various interpretations and holistic comprehension of research aims.

### 4.3. Participants

Participants in the pilot study were in their 3<sup>rd</sup> year of studies, whereas those in the main intervention study were in their final year of study, enrolled in a 4-year Bachelor of Education qualification. The pilot study was conducted in one tertiary institution, and the main intervention study consisted of students from two institutions of higher learning. These institutions are based in South Africa, Kwa-Zulu Natal province, one of the nine South African provinces. Figure 4.5 below illustrates the precise location of this province. This province is considered to have the second largest population, estimated to be 11.3 million people in 2019 (*South African Government, n.d.*). Most people in South Africa are generally multilingual, and the two main languages spoken in the KwaZulu Natal province are IsiZulu and English (*South African Government, n.d.*).

There are three main tertiary institutions in the KwaZulu Natal province that offers a 4-year Bachelor of Education qualification. In South Africa, students enrolled in this degree undergo teaching practice or school experience from the second year of study. This practical component is governed by the South African Department of Higher Education and Training. It mainly ensures that students are equipped with the necessary skills and competencies required for professional teaching.

**Figure 4.5**

*Nine Provinces of South Africa (Source: Nations Online Project, n.d.)*



### 4.3.1. Sampling Strategy

Convenience and purposeful sampling techniques were used to select participants. Convenience sampling is a type of nonprobability sampling, where participants are selected based on specific criteria, availability or willingness to participate (Etikan et al., 2016; Gulati & Taneja, 2013). On the other hand, purposive sampling involves selecting participants who are well-informed about a phenomenon of interest (Creswell et al., 2011). The process involves determining the research questions and identifying participants who are willing to provide information by virtue of their knowledge (Etikan et al., 2016). The main goal of purposive sampling is to focus on participants' particular characteristics and experiences, which best enables the researcher to gain deep insights into the study of inquiry (Rai & Thapa, 2015).

Students enrolled in the Bachelor of Education degree were chosen for several reasons. Firstly, all preservice teachers in South Africa undergo practical training. This means that they

are knowledgeable and aware of the education context and its challenges. The researcher believes that these participants are in a position to give valuable insights into the effectiveness and implementation of the intervention in education contexts. Secondly, there is a need for development programmes to prepare PSTs for their world of work (Lee, 2005). Thus, the intervention study was appropriate for the identified sample as it sought to develop and equip them with the self-awareness skills necessary for their chosen field. Thirdly, it was impossible to conduct this research with experienced teachers in public schools due to time constraints. Finally, the selected universities provided the support necessary to carry out this study. This includes providing the researcher with slots for student briefing, providing some academic slots for the intervention, and assisting with venue bookings.

#### **4.3.2. Sample size requirements**

To compute the sample size required for ANOVA analyses, G\*Power 3.1 (Faul et al., 2007; 2009) was used. The significance level  $\alpha$  was set at .05, and an estimated small to medium population effect size (e.g., partial  $\eta^2 = 0.25$ ). Tabachnick and Fidell (2014) suggested that the desired statistical power be set at 0.8, which is 80% probability of achieving a significant result if an effect exists. Based on these assumptions, the desired sample size is 128. The sample size required for ANOVA analysis was met with 86 cases for the intervention group and 82 for the comparison group.

For regression analyses, Green's (1991) rule of thumb was used to determine the total sample size required. According to Green (1991),  $N$  should be equal to, or more than  $50 + 8k$  (where  $k$  is the number of IVs), and  $N$  should be equal to or more than  $104 + k$  for testing individual predictors (Green, 1991). In this thesis, the intervention is the IV, and six dependent variables, i.e., emotional intelligence; implicit theories of intelligence; implicit theories of personality theories; implicit theories of emotion; organisational citizenship behaviour and work engagement. Based on these rules, the required sample size should be at least 58 cases

for regression analysis and 105 for testing individual predictors. Thus, a sample size of 168 (86 for the intervention group and 82 for the comparison group) in the main study meets these requirements.

Furthermore, in order to investigate the factor structure for the six instruments used, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) via structural equation modelling were utilised. Comrey and Lee (1992) proposed the following guidance in determining the sample size required for EFA: 100=poor; 200=fair; 300=good; 500=very good; 1000 or more= excellent. For CFA, Hu et al. (1992) revealed that samples with  $N > 500$  perform well. However, there is evidence that samples larger than 100 cases would be necessary to perform a satisfactory CFA. Existing literature denotes that CFA models with more indicator variables could be conducted with  $N = 50$ , while models with 3-4 indicators could be specified with  $N > 100$  (Marsh & Hau, 1999; Kyriazos, 2018). Therefore, 304 participants who completed the instruments at Time 1 in the main study meet the sample size requirements for an EFA and the CFA.

#### **4.3.3. Description of Participants (Pilot Study)**

The pilot study consisted of third-year preservice teachers enrolled in a four-year Bachelor of Education Degree at a South African institution of higher education. Details of the participants will be presented in the next Chapter.

#### **4.3.4. Description of Participants (Main Intervention Study)**

Third-year students were not available for the main intervention study as they had been placed in different schools for practical experience. Thus, the main study consisted of final-year preservice teachers from two institutions of higher learning based in South Africa. 305 students completed the six instruments at Time 1. Only one questionnaire was excluded due to many missing values, resulting in a total number of 304 participants. At Time 2, 144

participants completed the instruments. Of these participants, only 94 participants completed the intervention and completed the measures at Time 3. At follow-up, 86 participants from the intervention group completed the instruments, whereas 82 participants from the comparison group completed the measurements. Participants who completed the questionnaires at Time 1 and Time 2 only were excluded from the analysis. Table 4.1. below depicts the participants who completed the instruments at various time points.

**Table 4.1**

*Participants who completed the instruments at various points*

Group	Time 1	Time 2	Time 3	Time 4
Intervention	94	94	94	86
Comparison	82	9	0	82
Other	128	41	0	0
<b>Total</b>	<b>304</b>	<b>144</b>	<b>94</b>	<b>168</b>

After data cleaning, 168 participants were included in the analysis (86= intervention group; 82= comparison group). All participants were black South Africans. The intervention group consisted of 86 participants who completed the intervention and completed the follow-up questionnaire, and the comparison group consisted of participants who completed the research instruments at Time 1 and Time 4. Almost all participants in the comparison group did not undergo the intervention, with only a small portion who only attended the first session. Female participants comprised 70.2 % (118) of the sample, whilst 50 (29.8%) were male. The majority of the participants were in the 21-30 age group (160) 95.2%, compared to only 2 (1.2 %) in the 20years and younger and 31-40 age group, respectively. The majority of the

participants majored in Maths, Science and Technology 80 (47.6%), followed by those specialising in Economics and Management Science 50 (29.8%), followed by the Social Sciences 32 (19.0%), and lastly, those specialising in Life Orientation and Language Education 5 (3.0%). Table 4.2. below depicts the characteristics of the participants.

**Table 4.2**

*Demographic Characteristics of Participants*

	Frequency	Percentage
<b>Gender</b>		
Female	118	70.2
Male	50	29.8
<b>Age Group</b>		
20years& younger	2	1.2
21-30	160	95.2
31-40	2	1.2
<b>Subject Knowledge</b>		
Maths, Science & Tech	80	47.6
EMS	50	29.8
Social Sciences	32	19.0
L.O & L. E	5	3.0
<b>Institution</b>		
University 1	108	64.3%
University 2	60	35.7%

*\*Note: Maths, Science & Tech = Maths, Science & Technology; EMS= Economics & Management Science; L.O & L. E= Life Orientation & Language Education*



#### 4.3.5. Description of Participants (Intervention Evaluation)

The sample for intervention evaluation was taken from participants who attended all the intervention sessions ( $n = 94$ ). In total, 85 participants completed the feedback evaluation questionnaire. Of the 85 participants who completed the questionnaire, 56 preservice teachers were from the first university, and 29 were registered in the second university. Most participants who completed the questionnaire were female (67.1%), whereas only 26 males completed the questionnaire. The semi-structured interviews include 13 participants, all from the first university. Of the 13 participants who were available for interviews, 7 were female, whilst 6 participants were male. The description of characteristics is depicted in Table 4.3. below.

**Table 4.3.**

*Description of Participants (Intervention Evaluation)*

	University 1	University 2	Gender	
			Male	Female
Feedback Forms (Questionnaire)	56	29	28	57
Semi-structured Interviews	13	0	6	7
<b>Total</b>	<b>69</b>	<b>29</b>	<b>34</b>	<b>64</b>

#### 4.4. Main Instruments

This study used six main instruments. The Wong and Law Emotional Intelligence Scale (WLEIS) was used to measure emotional intelligence; the Implicit Theories of Intelligence Scale (ITI-S) measured beliefs about the nature of intelligence; the Implicit Person Theories Scale (ITP-S) was used to measure implicit theories of personality; the Implicit Theories of Emotion Scale (ITE-S) was used to measure beliefs about the nature of

emotions; Organisational Citizenship Behaviour Scale (OCB-S) was used to measure individual's helping behaviour, and the Utrecht Work Engagement Scale (UWES) measured participant's engagement. These measures are briefly described below. A full description of these measures will be found in Chapter 7, and the measures are attached in the Appendices (Appendix 9).

#### **4.4.1. Wong and Law Emotional Intelligence Scale (WLEIS)**

The WLEIS was developed by Wong & Law (2002) using samples based in Hong Kong. It is based on Mayer and Salovey's (1997) four emotional intelligence abilities and includes four components, i.e., Self-Emotions Appraisal (SEA); Others-Emotions Appraisal (OEA); Use of Emotion (UOE) and Regulation of Emotion (ROE) (Law, Wong & Song, 2004; Wong & Law, 2002).

SEA is the ability to understand and express emotions (e.g. I have a good sense of why I have certain feelings most of the time); OEA is the ability to perceive and understand others' emotions (e.g. I always know my friends' emotions from their behaviour); UOE is the ability to make use of emotions to make decisions (e.g. I always set my goals for myself and then try my best to achieve them), and ROE is the ability to regulate emotions (e.g. I am able to control my temper so that I can handle difficulties rationally) (Law, Wong & Song, 2004; Wong & Law, 2002). This scale consists of 16 items measured on a 5-point Likert scale (1= strongly disagree; 5= strongly agree). All items are positively worded, and total scores were calculated by computing the total mean scores. A high total score represents high emotional intelligence.

Studies report good internal consistency for this scale. Wong and Law (2002) reported good internal consistency reliabilities, which ranged from .83 to .90. Using a Chinese sample, Wang and Kong (2014) reported Cronbach alphas ranging from .75 to .88 for the subscales and .85 for the total scale. The reliability of the WLEIS has also been tested in other countries

outside China. Sulaiman and Noor (2015) indicated good reliability of the WLEIS, with Cronbach alphas ranging from .83 to .92, using the Malaysian sample. Carvalho et al. (2016) used a Portuguese and Spanish sample to investigate the reliability of the WLEIS. They reported good internal consistency reliabilities with Cronbach's alphas ranging from .83 to .89 (Carvalho et al., 2016).

#### **4.4.2. Implicit Theory Measures**

Three measures were employed to measure beliefs about intelligence, personality, and emotions. For implicit theories of intelligence, the *'Implicit Theories of Intelligence Scale'* (ITI) developed by Dweck and Henderson (1988) was used. This measure consists of 3 items, which only measure a fixed mindset or entity theory. Items include: *"You have a certain amount of intelligence, and you really can't do much to change it; Your intelligence is something about you that you can't change very much; You can learn new things, but you can't change very much"*. Dweck et al. (1995) reported high internal reliability for this measure with Cronbach alphas ranging from .94 to .98 and test-retest reliability of .80. Gonida et al. (2006) also demonstrated an acceptable internal consistency of .67 for this scale.

To measure implicit theories of personality, the *'Measure of Implicit Person Theories'* (ITP) developed by Chiu et al. (1997) was used. This measure also consists of 3 items measuring an entity theory or a fixed mindset. Items for this scale include: *'The kind of person someone is, is something very basic about them and it can't be changed very much; People can do things differently, but the important parts of who they are can't really be changed; Everyone is a certain kind of person, and there is not much that can be done to really change that'*. Studies have shown this scale as a reliable measure, with internal reliabilities ranging from .73 to .96 and test-retest reliability of .82 (Chiu et al., 1997; Dweck et al., 1995).

Beliefs about the nature of emotions were measured with the *'Implicit theories of Emotions'* (ITE) scale developed by Tamir et al. (2007). This scale consists of 4 items, with two items representing a fixed mindset/ entity theory (e.g. *No matter how hard they try, people can't really change the emotions they have*), and the other two items representing a growth mindset or an incremental theory (e.g. *Everyone can learn to control their emotions*). This measure has been largely used to measure the implicit theories of emotions and has been reported to have good internal reliability ranging from .75 to .79 (Kappes & Schiwoski, 2013; Romero et al., 2014).

All implicit theory measures were measured on a 6-point Likert scale (1=strongly disagree; 6= strongly agree). In line with past research, all items representing a fixed mindset were reverse scored and mean scores were computed (Dweck et al., 1995). Lower scores indicated a fixed mindset, and higher scores represented a growth mindset.

#### **4.4.3. Organisational Citizenship Behaviour Scale (OCB-S)**

The Organisational Citizenship Behaviour Scale (OCB-S), developed by Podsakoff et al. (1990), was used to measure citizenship behaviours. It is a common and widely used measure of OCB and demonstrates high internal reliability ranging from .70 to .85, showing that it is a reliable measure (Podsakoff et al., 1990). This scale is based on Organ's (1988) five dimensions of OCB, i.e., Altruism, Sportsmanship, Courtesy, Conscientiousness and Civic Virtue. The original measure is used in organisations; therefore, items were adapted to reflect the current study's population. For instance, the item *'I obey company rules and regulations even when no one is watching'* was changed to *'I obey university rules and regulations even when no one is watching'*. The original measure consists of 24 items. However, to prevent participant fatigue, only 15 items with three items on each subscale were selected in this study.

The sample item for the Altruism subscale is '*I am always ready to lend a helping hand to those around me*'. The sample item for Sportsmanship is '*I consume a lot of time complaining about trivial matters*'. The sample item for Courtesy is '*I do not abuse the rights of others*'. The sample item for the Conscientiousness subscale is '*I do not take extra breaks*'. The sample item for Civic virtue is '*I keep abreast of changes in the university*'. This scale was measured on a 5 Likert scale (1= strongly disagree; 5= strongly agree).

To score this measure, negatively worded items were reverse-scored, and total mean scores were computed. Podsakoff et al. (1990) reported high internal reliability ranging from .70 to .85.

#### **4.4.5. Utrecht Work Engagement Scale (UWES)**

The UWES was used to measure work engagement. The 9-item UWES scale developed by Schaufeli et al. (2006) was used for the pilot study. For the main intervention study, the 3-item UWES developed by Schaufeli et al. (2017) was utilised. The items in both these versions represent three components of work engagement which include vigour (i.e., When I study, I feel like I am bursting with energy); dedication (i.e., I am enthusiastic about my studies) and absorption (i.e., I am immersed in my studies) (Schaufeli et al., 2017). Both the UWES-9 and the UWES-3 demonstrate good internal consistencies. For example, a study by Matthews et al. (2020) revealed Cronbach's alphas of .79 and .85 for the UWES-9 using participants based in the United States of America. On a similar note, Choi et al. (2020) reported Cronbach's alpha of .77 for the UWES-3, which confirms the reliability of this scale.

Overall, the measures employed in this study are reliable and have demonstrated good internal consistency. However, there seems to be a lack of literature investigating the psychometric properties of these scales, especially in South Africa. The psychometric properties of these scales are examined in Chapter 7.

#### **4.5. Intervention Evaluation Instruments (Kirkpatrick Evaluation Form & Semi-Structured Interviews)**

Other forms of data collection instruments included a Kirkpatrick evaluation form (Kirkpatrick Partners, n.d.) and semi-structured interviews. These are presented below.

##### **4.5.1. Kirkpatrick Evaluation Form**

The Kirkpatrick Evaluation form (Kirkpatrick Partners, n.d.) was used to evaluate the intervention quantitatively. Permission to use this tool was granted by the Kirkpatrick Partners company (see Appendix 5). This evaluation form is based on Kirkpatrick's four-level model to evaluate training programmes. This model consists of four levels, i.e., reaction, learning, behaviour and results (Kirkpatrick & Kirkpatrick, 2016). The levels are described in Section 4.2.3. in this Chapter. Level 1 (i.e., reaction) and Level 2 (i.e., learning) were measured immediately after the intervention. Level 3 (i.e., behaviour) was measured four weeks after the intervention. The Pilot Study in Chapter 5 measured Level 1 (i.e., reaction) and Level 2 (i.e., learning). However, the main intervention study in Chapter 8 only included results from Level 1 (reaction level) of Kirkpatrick's evaluation model are presented in this thesis. This level is significant because it determines participants' engagement levels and their willingness to learn and apply what they acquire during the intervention (Kirkpatrick & Kirkpatrick, 2006; Mohamed & Alias, 2012).

Overall, the reaction level consists of 17 items divided into three dimensions which include engagement, relevance and satisfaction (Kirkpatrick & Kirkpatrick, 2016). The engagement dimension measures the extent to which participants are actively involved during the intervention (Kirkpatrick & Kirkpatrick, 2016). It also measures aspects that may contribute to the engagement level of participants, such as the classroom environment and the facilitator (Kirkpatrick & Kirkpatrick, 2016). A sample item for this dimension includes “I

*was engaged with what was going on during the programme*’. The relevance dimension is concerned with the intervention content and the degree to which participants will implement what they have learned (Kirkpatrick & Kirkpatrick, 2016). A sample item includes *‘‘The course material will be helpful for my future success’’*. Finally, the satisfaction dimension measures the extent to which participants were satisfied with the intervention implementation (Kirkpatrick & Kirkpatrick, 2016). Sample items include *‘‘I received helpful information prior to the session’’*; and *‘‘The presentation style of the instructor contributed to my learning’’*. Items are measured on an 11-point Likert scale, ranging from 0 (Strongly Disagree) to 10 (Strongly Agree).

#### **4.5.2. Semi-structured interviews**

Semi-structured, telephonic interviews were used to understand participants’ perceptions about the intervention. A semi-structured interview includes the elements of both structured and unstructured interviews. It involves predetermined questions but is flexible enough to use additional questions for further exploration (Wilson, 2014). Following this notion, the researcher employed an interview guide (see Appendix 6) but used probes to gather more information. A semi-structured interview was deemed appropriate for this research as it allows researchers to use their discretion to seek further opinions of participants (Wilson, 2014). Furthermore, it is critical to note that a telephonic medium is considered an appropriate alternative to face-to-face interviews. Cachia and Millward (2011) argued that telephone interviews provide good quality data on par with that obtained using face-to-face interviews. To this effect, the researcher conducted semi-structured interviews using the telephone as a medium.

#### **4.6. Data Collection Procedures**

Ethical clearance for both the intervention study and intervention evaluation was sought from the University of Nottingham, Division of Psychiatry & Applied Psychology ethics committee (see Appendix 1). Once this was granted, permission to conduct research was sought from the two institutions of higher learning (see Appendix 2). Thereafter, the lecturers, research, and postgraduate support staff provided possible dates for the briefing sessions and intervention. Briefing sessions were conducted during lecture set times. During these sessions, students were given detailed information about the training programme and invited to participate in this study. Participation information sheets and consent forms (see Appendix 3) were given to willing students, and they were asked to read them carefully. Only participants with signed informed consent forms were given the questionnaire consisting of all measures to complete.

For one university, the first two sessions were conducted during the lecture block times. Convenient times for the third and fourth session was set with participants. The fourth session was repeated twice to accommodate all students. For the second university, lunch hour time (12:00 pm) was used to run all the sessions. For convenience, a WhatsApp group was created consisting of all participants. This was purely used for communication, reminders, and necessary updates. Some participants assisted with organising their peers, reminding them of the training dates and times.

##### **4.6.1. Data collection procedures for the main questionnaires**

Recruitment for participants commenced with a briefing session. This is where participants were informed about this research study. Participation information sheets and consent forms were distributed, and participants completed all the measures which were immediately collected (Time 1). Participants completed the questionnaires again just before



the intervention started (Time 2). The training programme consisted of four sessions, running on four separate days. Data collected at Time 1 and Time 2 were set as the baseline. Participants were then asked to complete the measures on the last day of the intervention- immediately after the intervention (Time 3). Follow-up (Time 4) was conducted after four weeks. For one university, questionnaires were distributed and collected immediately at all time points. However, participants from the second university completed questionnaires for Time 4 online due to a busy schedule. Participants in the intervention group completed the questionnaires at all time points, whereas those in the comparison group completed the questionnaires only in Time 1 and Time 4. The pilot study was carried out in semester 1 (April-May 2019), whereas the main study was carried out in semester 2 (July-September 2019).

Furthermore, as participants in the intervention group completed the questionnaires multiple times, a counterbalancing technique was used to minimise and avoid testing effects, boredom, and exhaustion. Testing effects occur when participants become familiar with the measure (Kooken et al., 2017). Counterbalancing involves identifying all possible sequences and questionnaire item order (Kooken et al., 2017). The order of questionnaires is presented in Table 4.4. below.

**Table 4.4**

*Order of Instruments*

Time 1	A	B	C	D
Time 2	B	C	D	A
Time 3	C	D	A	B
Time 4	D	A	B	C

*\*Note: A=Wong and Law Emotional Intelligence Scale (WLEIS); B=Implicit Theory Measures; C= Organisational Citizenship Behaviour Scale (OCB-S); D= Utrecht Work Engagement Scale (UWES)*

#### **4.6.2. Data collection procedures for the feedback evaluation form and semi-structured interviews**

Participants completed the feedback evaluation form two times, i.e., immediately after the intervention (Time 3) and during follow-up (Time 4). This study only included data completed in Time 3 (i.e., reaction level) because it provided invaluable insights into the implementation of the intervention.

The semi-structured, telephonic interviews were conducted two months after the intervention (i.e., November 2019). Upon ethics approval, an invitation email was sent to the appropriate gatekeepers of the two universities. The email included relevant information about the study and a link to be shared with participants. However, due to university-related pressure, as it was towards the end of the semester, only participants from one university responded. Participants responded online by clicking the “yes” button in the system. Participants were also asked to provide their telephone numbers which allowed the researcher to contact them directly. Once all consents were provided, each participant was telephonically contacted to explain the aims of the interview further and to set a time and date convenient for them. Interviews were mainly conducted in English. However, during the interviewing process, the researcher noticed that few participants were more comfortable in their main language, ‘IsiZulu’. Therefore, some participants expressed themselves in IsiZulu, which allowed the researcher to gain more rapport. All transcripts were transcribed verbatim. Extracts in IsiZulu were translated into English by the researcher.

#### **4.7. Data analysis procedures**

Data for this study were in the form of questionnaires, feedback evaluation forms and semi-structured, telephonic interviews.

#### **4.7.1. Data from the questionnaires and feedback evaluation form**

Data from the questionnaires and the evaluation form was analysed using the IBM Statistical Package for Social Sciences (SPSS) version 27. Descriptive analyses were conducted to summarise and present data using means (*M*), standard deviations (*SD*) and percentages. Inferential statistical analyses determined the relationships between the variables and compared group responses. The level of statistical significance was set to 0.05 ( $p < 0.05$ ).

Total mean scores for the main questionnaires and subscales were computed. For the evaluation form, scores for items relating to three dimensions (i.e., engagement; relevance; satisfaction) were also computed.

#### **4.7.2. Data from semi-structured interviews**

Thematic analysis (TA) was employed to analyse qualitative data. This is the most widely used method to analyse qualitative research. TA is used to organise data into patterns of meaning (Braun & Clarke, 2012). It allows the researcher to see and make sense of participants' collective or shared meanings and experiences (Braun & Clarke, 2012). This method consists of six steps or phases which guide the analysis (Braun & Clarke, 2006). The first step includes familiarisation with data (Braun & Clarke, 2012). In this phase, the researcher carefully listened to all 13 audio-recorded interviews. In this process, the researcher transcribed interviews verbatim. The whole process allowed the researcher to internalise data whilst noting initial ideas.

Secondly, initial codes were generated (Braun & Clarke, 2012). Interview transcripts were imported into the NVivo software. Interviews were reread, and each data item was coded with the use of nodes and sub-nodes. At this point, the researcher thoroughly coded all data items to understand the overall patterns of meaning. Coding was mainly guided by research questions and Nielsen and Randall's (2013) process evaluation framework. The third phase

includes theme development (Braun & Clarke, 2012). At this stage, collated codes were read and reviewed to identify potential themes. Codes that were related to each other were clustered together. In the fourth stage, the researcher reviewed all potential themes. Themes were reviewed against collated extracts of data. This process ensures the quality of data and ensures that enough meaningful data is available to support the theme (Braun & Clarke, 2012).

The fifth stage involves refining and defining themes. Themes were grouped under Nielsen and Randall’s (2013) evaluation framework, i.e., intervention context, intervention content and implementation and mental models. In the sixth and final stage, themes were organised and presented in written format (Braun & Clarke, 2012). Figure 4.6 below depicts the six stages phases of thematic analysis.

**Figure 4.6**

*Six phases of a Thematic Analysis (Adapted from Braun & Clarke, 2012)*



**4.8. Ethical Considerations**

Ethical approval to conduct this study was granted in November 2018. Data collection procedures commenced in April 2019. The ethical approval letter from the University of

Nottingham, Division of Psychiatry and Applied Psychology ethics committee is attached in the Appendices (see Appendix 1).

This study upheld five main ethical principles, which include voluntary participation, privacy and confidentiality, informed consent, protection of participants and debriefing of research participants. These are discussed fully below.

### ***Voluntary Participation***

Participants were informed during the briefing sessions that participation in the study is purely voluntary. They were also informed about the right to withdraw at any stage of the study.

### ***Privacy and confidentiality***

Data from the questionnaires were anonymous and kept in a secure place to ensure confidentiality and privacy. Participants were only requested to provide their email address and their mobile numbers for identification. Data from the hardcopy questionnaires were manually captured in the researchers' computer and thereafter was destroyed. The computer is encrypted with a password known by the researcher only. Data from the interviews is also protected. Audiotapes and transcriptions are stored in the researcher's computer, which is encrypted with a password. All these efforts were made to ensure confidentiality and privacy.

### ***Informed consent***

Participants were briefed and informed about the study aims and what was expected of them. Participation information sheets and consent forms were distributed for participants to peruse. These forms included essential details about the research project. Participants were also enlightened about their rights during participation. Only participants who completed the consent form were given the questionnaires to complete.

### ***Protection of participants***

This study posed no risks or harm to participants. Participants were not deceived in any way as they were openly informed about the research aims. They were provided with a relevant lifeline contact number and told to contact them should they feel upset or uncomfortable during the training sessions.

### ***Debriefing of research participants***

A debriefing session was conducted with participants after the intervention. Participants were thanked and were given an opportunity to ask questions. The researcher's contact number and email address were already available to participants. They were told to contact the researcher anytime should they have any further questions.

## **4.9. Chapter Summary**

This chapter dealt with the research methodology used in this thesis. It explained the rationale for the mixed-methods design and discussed the research paradigm adopted. The characteristics of the participants were also described. This chapter also discussed the main instruments used. This included the questionnaires, evaluation form and semi-structured interviews. Data collection procedures and analysis techniques, and strategies were also discussed. This chapter concluded with a discussion of ethical considerations.

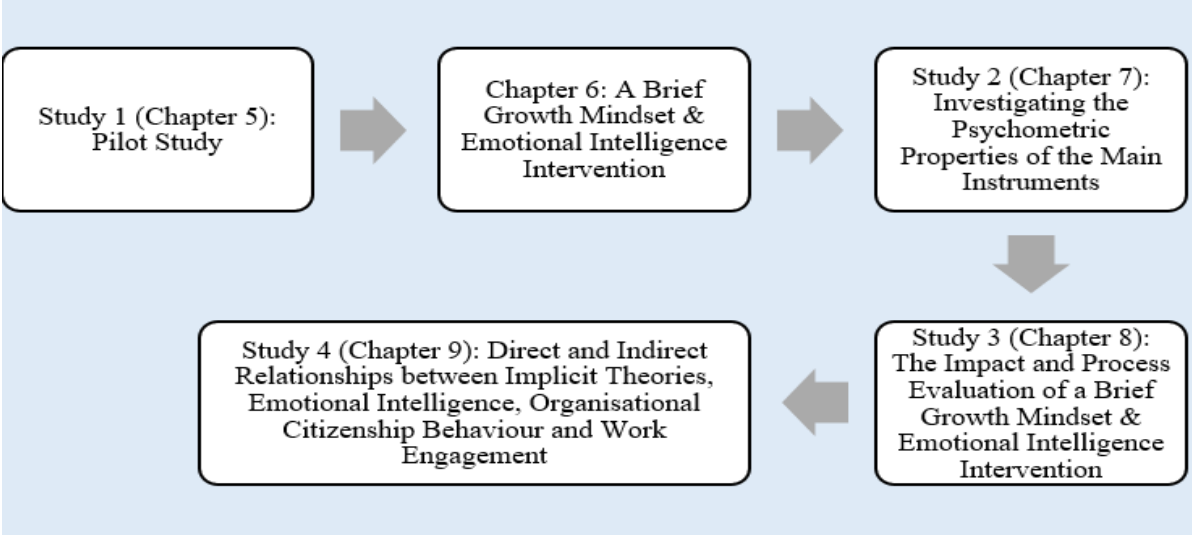
The following chapters present the research findings of the four main studies included in this thesis. Chapter 5 presents the findings of a pilot study. Chapter 6 provides the details of the main intervention. Chapter 7 presents the findings of the psychometric properties of the main instruments. Chapter 8 discusses the impact and process evaluation findings. Lastly, Chapter 9 presents the direct and indirect relationships among the study variables. All studies

consist of a brief study overview, a methodology section and a brief discussion. Figure 4.7.

below illustrates the structure of the empirical studies.

**Figure 4.7**

*Structure of the Empirical Studies*



### 5.1. Study Overview

There is growing evidence that the ability to manage emotions is a significant part of teachers' skillset (Corcoran & Tormey, 2012). To function well within this role requires a high level of intellectual capacity and an ability to understand one's and others' emotions to make the learning environment successful (Öznacar et al., 2017). To this end, emotional intelligence (EI) is an essential personal resource that teachers can capitalise on. EI is defined as an ability to perceive emotion, understand emotion, use emotions effectively, and successfully control and regulate one's emotions (Salovey & Mayer, 1990). Empirical evidence demonstrates that EI contributes to positive outcomes such as psychological well-being and can mitigate adverse consequences, including teacher burnout and stress (Ju et al., 2015; Mérida-López & Extremera, 2017; Salami, 2010; Vesely et al., 2013).

Nevertheless, EI is not the only crucial personal factor in education settings. Research demonstrates that implicit theories or mindsets are vital in this field (Dweck & Leggett, 1988; Dweck et al., 1995; Dweck, 2012; Paunesku et al., 2015; Yeager et al., 2013). According to Dweck & Leggett (1988), implicit theories are assumptions about the malleability of personal attributes (e.g., intelligence, personality, emotions, moral character, etc.). They act as a framework that guides people's thoughts and behaviour (Yeager & Dweck, 2012). In their model of implicit theories, Dweck & Leggett (1988) identified two mindsets, which include a fixed mindset (i.e., entity theory) and a growth mindset (i.e., incremental theory). Dweck (2012) argued that when people hold a fixed mindset, they believe that their human attributes are fixed and cannot be changed or developed. These people tend to avoid criticism and react helplessly under challenging situations (Dweck et al., 1995; Dweck, 2012).



In contrast, individuals who hold a growth mindset tend to believe that their human attributes can be changed through effort, persistence and hard work (Dweck, 1986; Dweck, 2012). People with a growth mindset tend to embrace challenges, accept criticisms, and show higher resilience when experiencing setbacks (Dweck, 2012). Research on implicit theories has predominately focused on students. Implicit theories have been associated with students' academic achievement, achievement goals, adjustment outcomes and self-regulation, where individuals with a growth mindset tend to report higher academic achievement, positive affect and more adaptive coping mechanisms (Bråten & Strømsø, 2004; Blackwell et al., 2007; Greene et al., 2010; Tarbetsky et al., 2016; Shih, 2011; Shively & Ryan, 2013; Wang & Ng, 2012). Unfortunately, research in this field has focused mainly on learners and paid less attention to teachers and preservice teachers (PSTs) who may need the skills and knowledge to implement a growth mindset in the school environment (Blad, 2016).

Drawing from the literature, the significance of EI and mindsets in education settings is undeniable. Existing literature reveals that these abilities can be trained (Hen & Sharabi-Nov, 2014; Yeager & Dweck, 2012). Research indicates that EI training contributes to enhanced EI abilities, service quality and psychological well-being (Beigi & Shirmohammadi, 2011; Groves et al., 2008; Hen & Sharabi-Nov, 2014; Nelis et al., 2009; Ruiz-Aranda et al., 2012). On the other hand, growth mindsets interventions have also been demonstrated to result in higher achievement, positive behaviour and high motivation (Andersen & Nielsen, 2016; Blackwell et al., 2007; Paunesku et al., 2015; Yeager et al., 2013). Guided by this body of knowledge, the current study proposes an integrated intervention encompassing mindsets and EI. It would be interesting to learn how these two psychological theories can promote PSTs' positive attitudes and prosocial behaviour.

The main aim of this study is to develop and investigate the effects of this integrated intervention on PSTs' EI, mindsets and prosocial behaviour, i.e. organisational citizenship

behaviour (OCB) (i.e. voluntary, helping behaviour) and work engagement (i.e. a sense of feeling high energy, inspiration and absorption towards work). OCB and work engagement are significant in education as teachers who demonstrate these behaviours are likely to be more engaged at work and may go out of their way to assist students and new colleagues (Bakker et al., 2008; DiPoala & Hoy, 2005; Organ, 1988). As positive constructs, growth mindset and EI are likely to elicit these behaviours.

Research indicates that a growth mindset emphasises potential and a vigorous effort, which may enable individuals to be engaged at work and may facilitate helping behaviour (Keating & Heslin, 2015). On the other hand, EI is concerned with managing emotions which may drive individuals to manage work challenges positively and to be more empathetic, thus facilitating work engagement and voluntary, helping behaviour (Abraham, 1999; Bouckenoghe et al., 2014). The findings of this research study may contribute to the overall well-being of PSTs and may provide them with the psychological tools that they can use to promote positive behaviour and deal with work challenges once they fully enter the work environment.

## **5.2. Current Investigation and Study Aims**

This study aims to develop and investigate the effects of an intervention grounded on EI and growth mindset theories. The study seeks to understand the impact of this intervention on PSTs' EI, mindsets, OCB and work engagement. It also aims to investigate the feasibility of the intervention study. To fulfil this aim, the content of the intervention was investigated. This included the activities and the time taken to complete the sessions. The feasibility of the various measurement points was also examined. This was important to investigate, given the busy schedule of university settings. Moreover, the time spent to complete the questionnaires

and the comprehension of the items were also investigated. Overall, the pilot study provided invaluable insights and allowed for reflection on the research processes, which included the recruitment strategies and methods of retaining participants throughout the research.

### **5.3. Research questions and hypotheses**

This study addresses research question one of the thesis.

#### **5.3.1. Research question:**

How does participation in a pilot Growth Mindset & Emotional Intelligence (GMEI) intervention affect preservice teachers' emotional intelligence, mindsets, organisational citizenship behaviour and work engagement?

#### *Hypotheses:*

1. Preservice teachers will demonstrate an increase in emotional intelligence post-intervention.
2. Preservice teachers will exhibit a growth mindset post-intervention
3. Preservice teachers' organisational citizenship behaviour will be significantly higher after completing the training programme.
4. Preservice teachers' work engagement will increase post-intervention

### **5.4. The Growth Mindset and Emotional Intelligence Training Programme (Original Intervention)**

Based on a review of literature, an intervention grounded on mindsets and EI emotional intelligence was developed. The intervention content, including the activities and techniques employed, was underpinned by theory and past research. This intervention aimed to teach PSTs to adopt a growth mindset and to enhance their EI skills. The intervention consisted of

five main topics (i.e., Mindsets; Perceiving Emotions; Using Emotions; Understanding Emotions & Managing Emotions), which were covered in four sessions. The rationale for each topic and the materials selected are discussed below.

### ***Session One: Mindsets***

The first topic, “Mindsets”, was included to assist PSTs in understanding different mindsets developed by Dweck (1986) and Dweck and Leggett (1988). The purpose of this session was to provide PSTs with the knowledge of the different mindsets and how these mindsets may influence their thoughts and behaviour. Activities and techniques included in this session were guided by previous interventions (e.g., Blackwell et al., 2007; Yeager et al., 2013). All materials used in this session were developed by Mindset Works, an organisation that Carol Dweck co-founded to train teachers and students. Permission to use these materials was sought from the organisation (see Appendix 5).

This session commenced with an introductory video from Mindset Works. This video captured the difficulties in learning, such as demotivation, loss of interest and misunderstanding. In this video, pupils explain the challenges they face in class and their ideas about what motivates them to do their best in school. This was an essential feature to include to set a context for the mindset theory. In addition, the role of language was also included in this session. Research shows that mindsets develop through socialisation (Blackwell et al., 2007). The way parents and teachers praise students may play a role in developing a certain belief (Gunderson et al., 2013). For emphasis, the ‘*Growth Mindset Framing Tool*’ and the ‘*Growth Mindset Feedback Tool*’ was included. These tools highlight the appropriate language that can be used to provide effective student feedback. For this activity, PSTs were asked to read through the two documents and select language that they are committing to use in the classroom. Each participant was given a chance to share their personal commitments with the group.

This session also included an explanation of how neuroscience supports a growth mindset. This was included because it shows how the brain develops with effort and challenge. This part is significant in teaching a growth mindset. Previous interventions have included this element to demonstrate brain neuroplasticity (e.g., Blackwell et al., 2007; Schleider & Weisz, 2018; Yeager et al., 2013). In this part, a video of how the cells in the brain grow and develop is shown. As part of an activity, PSTs were asked to read through an article entitled “*You can grow your intelligence*”. This article is used in almost all growth mindsets interventions (e.g., Blackwell et al., 2007; Yeager et al., 2013).

After reading the article, participants were asked to write a letter to their future students explaining to them how the brain can change and how they can use it to learn new things. This is called the ‘saying is believing task’. This task is essential and has been found to be effective in previous growth mindset interventions (Blackwell et al., 2007; Yeager et al., 2013). It is argued that when people are asked to communicate the message to someone else, it allows them to understand the message and can lead them to challenge their beliefs whilst accepting the notions of the message (Aronson, 1999; Yeager et al., 2016).

The following sessions focused on the four dimensions of EI described by Salovey and Mayer (1990), i.e., Perceiving Emotions; Using Emotions to Facilitate Thought; Understanding and Managing Emotions.

### ***Session Two: Introduction to Emotional Intelligence/ Perceiving Emotions***

This session consisted of two parts. The first part defined EI as conceptualised by Salovey and Mayer (1990), and the second part dealt with the Perceiving Emotions dimension.

### ***First Part***

In this session, participants were introduced to EI. The role of emotions in cognition and behaviour was explained. The four dimensions of EI by Salovey and Mayer (1990) were also clearly explained. For this session, as in Kornacki and Caruso's (2007) EI training, PSTs were asked to discuss why EI is vital to them and their field and how they intend to use the information they will gain throughout the EI sessions. This enabled PSTs to understand the value of EI and understand how they can implement the information they will acquire.

### ***Second Part – Perceiving Emotions***

Perceiving emotions is the first branch of EI (Mayer et al., 2008). According to Salovey and Mayer (1990), perceiving emotions is the ability to identify emotions accurately. The activities included here tackled both the ability to identify emotions in oneself as well as in others. The first activity included the “*Mood Meter*” adapted from Kornacki and Caruso's (2007) EI intervention. For this activity, PSTs were asked to mark their current mood on a five-point scale, ranging from unpleasant to pleasant. The main aim of this activity was to guide self-awareness and enable participants to practise self-identification of emotions. The second activity was a “role play”, where PSTs were asked to work in pairs and demonstrate how they express their feelings or emotions towards learners. In this activity, PSTs explored the situation and received feedback from the group in terms of how the situation was handled. This activity was chosen because it allowed PSTs to reflect on how they express their feelings and how this might affect their future students. The same activity was included in Hen and Sharabi-Nov's (2014) ability EI intervention among teachers.

The third activity included the pictures of the University of California, Davis, Set of Emotion Expressions (UCDSEE), where PSTs were asked to match the pictures with basic emotion families (i.e., anger, disgust, embarrassment, fear, happiness, neutral, pride, sadness,

shame and surprise) (Tracy et al., 2009). The main aim of this activity was to allow participants to understand different emotions and different facial expressions and body language associated with them. Herpertz et al. (2016) also used this activity to enhance emotion perception.

### ***Session Three: Using and Understanding emotions***

This session dealt with EI's second and third dimensions, which include using emotions to facilitate thinking and understanding emotions (Salovey & Mayer, 1990). The first dimension involves using emotions effectively to make decisions. For this part, the '*Use of Emotion Teacher Activity*' from Brackett and Katulak (2006) was included. This activity was chosen because it seeks to increase awareness of how emotions influence our thinking and behaviour (Brackett & Katulak, 2006). In this activity, PSTs were asked to write down how aspects of their environments affect their emotions and the way they interact with others. This activity also allowed participants to think of strategies they would employ to create positive moods in their classrooms. Moreover, this activity required PSTs to think of upcoming events (e.g. teaching practicum) and think of how they can generate positive emotions. They were asked to choose strategies they would use and share their personal commitments with the rest of the group.

The second part of this session focused on the third dimension of EI, which is *understanding emotions*. This dimension involves understanding emotions and the messages they convey (Salovey & Mayer, 1990). PSTs were shown a video about bullying. They were asked to identify their emotions and understand the reasons behind the emotions they experienced. They were then asked to share in small groups. As part of an activity, PSTs were asked to also think about a challenging learner they encountered during their teaching practicums and understand their feelings towards the learner. This activity was included because it allowed PSTs to reflect and think about their own feelings and emotions towards

other people. Reflection is essential in teaching EI. It encourages the individual to confront their beliefs, feelings and values (Horton-Deutsch & Sherwood, 2008). A similar activity was employed by Hen and Sharabi-Nov (2014) in their EI training for teachers.

In this session, case studies or vignettes were also included. In this activity, PSTs were asked to understand their emotions in each situation. They were asked to work in pairs and think of possible effective strategies that could be used to deal with those situations. This activity allowed PSTs to work through hypothetical situations whilst thinking about positive strategies to deal with challenging situations in their field.

#### ***Session Four: Managing Emotions***

This session dealt with the final dimension of EI as defined by Salovey and Mayer (1990). Managing emotions refers to effectively regulating and managing one's emotions (Salovey & Mayer, 1990). In this session, the researcher explained how emotions affect the way we think about different situations. Kornacki and Caruso (2007) refer to this phenomenon as emotional lenses. In simple terms, humans tend to think the way they feel. Kornacki and Caruso (2007), however, argued that whilst our emotional lenses are helpful and accurate, they can sometimes be distorted and harmful (Kornacki & Caruso, 2007). This session sought to enable PSTs to understand different perspectives and how emotional lenses sometimes cause friction and conflict in social situations. In this session, PSTs were asked to complete the *'Management of Emotion Teacher Activity'* by Brackett and Katulak (2006). As part of this activity, PSTs had to write down the triggers of their emotions and explore the effectiveness of the emotion management strategies they can use to manage their emotions.

It is important to note that each session was initially designed to run for 2 hours (see the manual of the original intervention in Appendix 7). However, the researcher was only given an hour slot during the recruitment stage. Therefore, some adjustments were made



during the implementation phase. For example, activities that could not be completed during the 1-hour slot were taken as homework, e.g., the ‘You can grow your intelligence’ article and the ‘saying is believing task’ activities for session one. Table 5.1. below illustrates a summary of the original intervention. This includes the sessions and readings used to create intervention content as well as techniques and activities utilised.

**Table 5.1**

*Summary of the Original Growth Mindset and Emotional Intelligence Training Programme*

<b>Session &amp; Readings</b>	<b>Techniques &amp; Activities</b>
1. Mindsets (Dweck & Leggett, 1988; Dweck, 2007; 1986)	*Brief introduction about the challenges in the teaching profession *Introductory Video (Mindset Works) *Different mindsets were explained in terms of abilities, goal orientation, effort, mistakes, feedback and reactions to setback * The role of language (i.e. praising effort vs. process) in forming these mindsets was explained. ➤ <b>Reflective (<i>The Growth Mindset Framing Tool and the Growth Mindset Feedback Tool-activity</i>)</b> . Participants were asked to extract two growth mindset framing statements that they are going to use when introducing a new assignment. They also had to extract one feedback language they would use when providing feedback. After the activity, they had to share their personal commitments in pairs. *The Malleable mind- explain how neuroscience supports the growth mindset (A video showing neuroplasticity) ➤ <b>Reflective (<i>self-persuasion task</i>)</b> : Participants were asked to read an article titled ‘You can grow your intelligence’. Thereafter, participants were asked to write a letter to future students explaining how the brain develops through learning.
2. Emotional Intelligence/Perceiving Emotions (Brackett & Katulak, 2006; Goleman, 1995; Kornacki & Caruso, 2007; Mayer & Salovey, 1990)	*Icebreaker (optional): The Myers-Briggs Type Indicator (MBTI). Preservice teachers to complete the MBTI profile and share their profile with the rest of the group.

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\*Participants were introduced to emotional intelligence. Daniel Goleman's (1995) 'emotional hijacking' was used to explain the role of emotions in cognition and behaviour. Mayer and Salovey's (1990) emotional intelligence dimensions were also explained. Perceiving emotions was explained in more detail.

- **General Discussion:** Participants were asked to briefly discuss why EI is important for them and how they intend to use the information that they will gain throughout the EI sessions
- **Reflective & Self-awareness (Mood Meter):** On a 5-point scale, participants plotted their pleasantness and energy levels in accordance with their current mood. Participants were encouraged to think about how they feel mostly when they are in the school environment. And also about how they feel most in their personal life. They were also asked to think about the causes of their emotions
- **Reflective (Role-Play):** Participants were asked to explore the way they express their feelings towards the pupils. As part of the activity, preservice teachers were asked to think about the situation or scenario guided by questions (i.e. what was the situation?; what did the pupil do?; how did it affect you? How did you express your emotions, e.g. verbally or nonverbally? Participants were asked to do a short role-play and receive feedback from the whole group.

3. Using and Understanding Emotions  
(Brackett & Katulak, 2006; Mayer & Salovey, 1990)

\*Icebreaker (optional): 'Two truths and a Lie'

\*Using Emotions to Facilitate Thinking: this dimension was explained.

- **Reflective (Use of Emotion Teacher Activity):** Preservice teachers had to think of how the environment affects their emotions and the way they interact with other people. They also had to think of upcoming events and think of different strategies they would use to generate positive emotions. Strategies to be shared with the whole group.

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\*Understanding Emotions: this dimension was explained

- **Reflective:** A video about bullying at school was shown. Preservice teachers to identify their emotions and understand the reasons behind their emotions. They were then asked to share their thoughts and emotions in small groups.
- **Reflective:** Following up on the previous activity, participants were asked to work in pairs and think about a challenging situation (e.g. a misbehaving pupil) that they had faced in the school environment. In their discussion, they have to consider these questions: what happened? How did you feel? How did you react? What could you have done differently?
- **Case Studies or Vignettes:** Preservice teachers were asked to work in pairs and go through the hypothetical scenarios. They were then asked to think of different effective strategies that could be used in each scenario.

\*Debrief about the previous sessions

\*The managing emotions EI dimension was explained

- **Reflective (Management of Emotion Teacher Activity):** Participants were asked to write down triggers to their emotions in the school environment and discuss different emotion management strategies that they can use to control their emotions.
    - A summary of all the sessions was provided
- 

#### 4. Managing Emotions

(Brackett & Katulak, 2006; Mayer & Salovey)

## **5.5. Methodology**

### **5.5.1. Research Design**

A repeated measures design was employed where participants were measured at three-time points: four weeks before the intervention (Time 1), immediately before the intervention starts (Time 2), and immediately after the intervention (Time 3).

### **5.5.2. Participants**

Participants for the pilot study comprised 3<sup>rd</sup>-year level students enrolled in a four-year Bachelor of Education Degree at a South African institution of higher learning. At Time 1, 108 participants completed the questionnaires. However, 30 questionnaires were completed improperly and thus were excluded. After data cleaning, responses for Time 1 were 78. Of the 78 participants, 47 (60.3%) were female, while 31 (39.7%) were male. Almost all participants were black (97.4%), and only 1 (1.3%) Indian and 1 (1.3%) Coloured participant. Most participants were between the ages of 21-30 (74.4%), followed by those in the 20 years and younger category (21.3%) and lastly, those between the ages of 31-40 (1.3%). Of the 78 participants, 49 majored in Maths, Science & Technology (62.8%) and 13 (16.7%) in the Economics & Management Science stream.

The study had 78 participants at Time 1. However, only 39 participants completed the questionnaire at Time 2. Finally, only 22 participants completed the four sessions and completed the questionnaire at Time 3 and thus were included in the analysis. The retention rate was 56.41%.

Of the 22 participants who completed the intervention, 16 participants were female (72.7%), while only 6 (27.3%) were male. Most participants were between the ages of 21-30 (77.3%), and only 5 (22.7%) were 20 years and younger. Of the 22 participants, 13 (59.1%)

majored in the Maths, Science & Technology stream, whilst only 5 (22.7%) majored in Economics & Business Science. All 22 participants were black in terms of race (100%).

### **5.5.3. Instruments**

The Wong and Law Emotional Intelligence Scale (WLEIS) by Wong and Law (2002) was used to measure emotional intelligence. Implicit theories (i.e., intelligence, personality and emotions) were measured using established instruments developed by Dweck and Henderson (1988), Tamir et al. (2007) and Chui et al. (1997), respectively. The Organisational Citizenship Behaviour Scale (OCB-S) by Podsakoff et al. (1990) was used to measure OCB. The 9-item Utrecht Work Engagement Scale (UWES) by Schaufeli and Bakker (2004) was used to measure work engagement. Details of these measures are found in the previous chapter and in Chapter 7.

For evaluation purposes, this study utilised the Kirkpatrick evaluation form. The Kirkpatrick evaluation tool is based on Kirkpatrick's (2013) four-level (i.e., reaction; learning; behaviour; results) evaluation model. This is considered a well-rounded tool for evaluating training programmes (Naugle et al., 2000). For the purposes of this pilot study, only the reaction level (i.e., participants' reaction to the programme) and learning level (i.e., the extent to which participants learn and improve their knowledge and skills after attending the programme) were assessed (Dewi & Kartowagiran, 2018).

These were all combined into one questionnaire and were distributed manually.

## **5.6. Analysis**

A repeated-measures analysis of variance (ANOVA) was used to test the differences in scores across the three-time points (i.e., Time 1, Time 2, Time 3). Repeated measures ANOVA is most appropriate when participants all underwent the conditions of an experiment or provided data at multiple time points (Field, 2013). In this study, participants were involved in an intervention study and were tested at three-time points. For this analysis to be fulfilled, a set of assumptions must be met, and this includes normality of data and sphericity (i.e., the assumption that the variances of the differences between levels are equal) (Field, 2013). A non-parametric Friedman Test, which is equivalent to repeated-measures ANOVA, was employed in conditions where the assumptions were not met.

Descriptive statistics were performed to analyse data from the evaluation feedback form.

## **5.7. Procedures**

Firstly, this study sought permission from the University of Nottingham ethics committee (see Appendix 1). Permission to conduct this research was also sought from the relevant universities. Initially, two universities granted permission. However, during participant recruitment, less than 20 participants showed interest in one of the Universities. Therefore, a decision was made to focus on one University which showed strong support for the study and had more interested and willing participants.

The study commenced with a briefing session. This is where the researcher went to the lecture halls, with permission from the lecturers involved. During the briefing session, participants were provided with full details about the study. Participants were given the consent

form, and only those with a signed informed consent were given a questionnaire to complete. Questionnaires were collected immediately after participants had completed them. This was considered Time 1. Participants were also informed about the dates, venue and time of the training programme.

Due to a large pool of participants at Time 1 and a small given venue, a decision was made to organise the participants into groups of 15. With this strategy, the intervention was planned to run for several weeks to accommodate all participants. However, this proved to be an issue as most participants ended up losing track, hence high rates of non-attendance. This research study was also affected by student protests which contributed to low completion rates. Participants had to complete the same questionnaire immediately before the intervention (Time 2) and immediately after the intervention (Time 3). Because of time, participants were given the evaluation feedback forms to complete from home and submit the following day.

## **5.8. Results**

### **5.8.1. Impact of the Intervention on EI**

A repeated-measures ANOVA was used to test if there were significant differences in EI over the three-time points. Data on EI were normally distributed at each time point, as assessed by the Normal Q-Q Plots. Mauchly's test of sphericity indicated that the assumption of sphericity was not violated  $\chi^2(2) = .37, p=.83$ . There was no significant difference between three-time points  $F(2, 42) = 1.27, p=.29$ , which indicates that the distribution of EI scores between the three-time points (Time 1,  $M=4.09$ ; Time 2,  $M=4.01$ ; Time 3,  $M= 3.88$ ) are the same.



### 5.8.2. Impact of Intervention on Implicit Theories

Prior to the analysis, the normality of data was tested utilising Normal Q-Q Plots. For implicit theories of intelligence (ITI), data at Time 1 and Time 3 were normally distributed, whereas data at Time 2 was not normally distributed as it was presented by data points that followed an S-shape. Therefore, a non-parametric Friedman test was used to determine the differences in ITI over the three-time points. For both the implicit theories of personality (ITP) and implicit theories of emotion (ITE), data were normally distributed at all three points, and therefore, a repeated-measures ANOVA was used to test the differences.

A non-parametric Friedman test of differences was conducted to determine if there were significant differences in implicit theories of intelligence (ITI) over three-time points. Results indicated a non-significant difference between the three-time points  $\chi^2(2) = 3.55, p = .17$ . These findings show that the distribution of ITI scores in three-time points (Time 1,  $M = 2.83$ ; Time 2,  $M = 2.74$ ; Time 3,  $M = 3.56$ ) is the same. However, upon a close examination, higher mean scores at Time 3 demonstrated a growth mindset than those at Time 1.

A repeated-measures ANOVA was used to test the differences in scores for ITP on three-time points. Mauchly's test of sphericity indicated that the assumption of sphericity was not violated  $\chi^2(2) = 3.20, p = .20$ . Results indicated a significant difference between the three-time points, however, with a small effect size  $F(2, 36) = 4.25, p = .022, \eta_p^2 = .191$ . Nevertheless, Bonferroni post hoc tests demonstrated no significant differences between the different time points, although the mean scores at Time 3 were higher than those at Time 1 (Time 1,  $M = 3.03$ ; Time 2,  $M = 2.65$ , Time 3,  $M = 3.65$ ). These contradictory results might be due to low statistical power.

A repeated-measures ANOVA was also used to investigate the differences in scores for ITE. Mauchly's test of sphericity indicated that the assumption of sphericity was not violated  $\chi^2(2) = 1.81, p = .40$ . However, the results obtained were non-significant, showing no differences in ITE scores between the three-time points  $F(2, 42) = .77, p = .77$ . This indicates that the scores between the three-time points (Time 1,  $M = 4.30$ ; Time 2,  $M = 4.03$ ; Time 3,  $M = 4.08$ ) did not differ.

### **5.8.3. Impact of Intervention on OCB**

Normal Q-Q Plots indicated that data on OCB was normally distributed at each time point. Thus, a repeated-measures ANOVA was used to determine whether there were significant differences in OCB scores over the three-time points. Mauchly's test of sphericity indicated that the assumption of sphericity was not violated  $\chi^2(2) = .74, p = .69$ . There was no significant difference between the three-time points  $F(2, 40) = 1.63, p = .21$ . This indicates that the mean scores for OCB at the three-time points are the same, even though the mean scores for Time 3 were slightly higher than those at Time 1 (Time 1,  $M = 3.72$ ; Time 2,  $M = 3.89$ ; Time 3,  $M = 3.76$ ).

### **5.8.4. Impact of Intervention on Work Engagement**

A repeated-measures ANOVA was also used to determine if there were significant differences in work engagement scores over three-time points. Data on the three-time points were normally distributed, as demonstrated by the Normal Q-Q Plots. Mauchly's test of sphericity indicated that the assumption of sphericity was not violated  $\chi^2(2) = 5.20, p = .07$ . There was no significant difference between the three-time points  $F(2, 40) = .69, p = .51$ . These findings indicate that the mean scores for work engagement at the three-time points are not statistically different (Time 1,  $M = 3.98$ ; Time 2,  $M = 4.27$ ; Time 3,  $M = 3.97$ ).

### 5.8.5. Results from the Feedback Form

The Kirkpatrick evaluation form was used to gain participants' feedback on the training programme. Only level 1 (reaction) and level 2 (learning) were measured. Items on this questionnaire are measured on an 11-point Likert scale, ranging from 0 (Strongly Disagree) to 10 (Strongly Agree). Mean scores were computed.

For the reaction level, all items were high, ranging from 8.53 to 9.41, indicating that participants were enthusiastic about the programme. Mean scores for the learning level were also high, showing that participants deemed the training programme relevant and worthwhile and felt they were confident applying the knowledge acquired during the programme. Table 5.2. below depicts the mean scores of these levels.

**Table 5.2**

*Mean Scores for the Reaction and Learning Levels of the Kirkpatrick Evaluation Form*

Item	Mean	Description
<b>Level 1: Reaction Level</b>		
I took responsibility for being fully involved during this training programme	8.76	Strongly Agree (SA)
I was engaged with what was going on during the programme	8.94	SA
The class environment helped me to learn	8.82	SA
My learning was enhanced by the facilitator	8.82	SA
This programme held my interest	9.35	SA
I understand how to apply what I learned	8.88	SA
The course material will be helpful for my future success	9.12	SA
I will be able to use what I learned immediately	8.94	SA
What I learned in this class will help me on the job/ practicum	9.00	SA
I understand why this programme was offered	8.65	SA
The information in this programme is relevant and applicable to my line of work	9.29	SA
I received helpful information prior to the session	8.53	SA
Taking this programme was worth my time	8.76	SA
I will recommend this programme to my peers	9.24	SA
I would be glad to help others with what I learned	9.41	SA
I would like follow-up to help me apply what I learned	8.88	SA
The presentation style of the instructor contributed to my learning experience	9.18	SA
<b>Level 2: Learning</b>		
I believe this course's content is important to succeeding on the job/ (practicum)	9.18	SA
I believe it will be worthwhile to apply what I learned on the job/practicum	8.94	SA
I feel confident about applying what I learned on the job (practicum)	8.88	SA

In addition to the invaluable insights demonstrated in the Kirkpatrick evaluation form, participants provided some valuable comments and suggestions to improve the intervention.

Participants asserted that:

- The training programme should be introduced to all Bachelor of Education levels of study
- More time is needed to grasp the information
- The training programme was too short
- More activities are required to increase engagement
- The training programme must include more practical strategies
- Overall, the information contained in the training programme was valuable

## **5.9. Discussion of Findings**

This investigation aimed to investigate the impact of a pilot intervention on EI, mindsets, OCB and work engagement. The findings of this pilot study revealed no significant differences in scores before and after the intervention. These results are inconsistent with the growing research studies that have found that EI training programmes and growth mindset interventions culminate in a myriad of positive outcomes, such as an enhancement of EI skills and psychological well-being (Hen & Sharabi-Nov, 2014; Ruiz-Aranda et al., 2012). However, despite these negative results, high mean scores for OCB, implicit theories of intelligence and personality were observed during the post-test (i.e. Time 3). Although these changes did not reach a statistical significance, they, to some extent, indicate that participants exhibited positive helping behaviour after the intervention. The changes in the mean scores also demonstrated a growth mindset for intelligence and personality, meaning that post-training, participants

believed that intelligence and personality traits are amenable to change and can be improved through effort and persistence.

Several reasons can explain these non-significant findings. Firstly, this study consisted of only 22 participants. Research reveals that studies with low power have reduced chances of detecting a true effect (Button et al., 2013). Secondly, there was no follow-up conducted in this study. Studies have indicated that change due to an intervention might occur over time. When Clarke (2010) investigated the impact of a 2-day EI intervention, he found non-significant results on data collected one month after the intervention. However, significant, positive results were found six months post-training (Clarke, 2010). Similar findings are observed in growth mindset intervention studies. Yeager and Dweck (2012) reported that a growth mindset training might not have an immediate impact. This suggests the importance of a long-term follow-up.

Moreover, results from the feedback evaluation form indicated that participants enjoyed the training and thought it was crucial to their world of work. High mean scores were obtained on both the reaction and learning levels, suggesting that this intervention was worthwhile and valuable for PSTs. A review of the literature shows that participant reactions predict participants' satisfaction and engagement levels (Mohamed & Alias, 2012). In addition, positive participation reactions determine their willingness to apply the skills and knowledge learnt (Mohamed & Alias, 2012). Taken together, whilst the quantitative results did not reach a statistical significance, the evaluation feedback shed light on the criticality of this intervention in the education field. Consequently, these findings are promising and warrant further investigation.

## **5.10. Changes to the Intervention**

Findings from the pilot study provided valuable insights and ways of improving the quality of the intervention. Significant changes were made to the original intervention to ensure that the content and techniques employed were relevant to the target participants.

### ***Session 1: Mindsets***

- This session was too long, which remained challenging to finish all the activities during the session. The introductory video, the growth framing tool and the growth feedback tool were removed. The introductory video was deemed unnecessary as it repeated the introduction of the facilitator.
- The growth framing and feedback tools require a lot of time and explaining. Thus, a decision to remove these activities was made.
- To make this session more enjoyable and understandable, the Hebbian Theory (1949) was added to explain the growth mindset more clearly.
- In order to make the participants engage more, a quiz was included in this session. The aim of this quiz was to check the understanding of the participants in terms of the two mindsets.

### ***Session 2: Introduction to Emotional Intelligence/ Perceiving Emotions***

- Instead of making it an option, the MBTI (only Extraversion & Introversion) section was included. This is because more PSTs seemed to enjoy doing this self-awareness exercise.
- More time was given to the Mood Meter. The four quadrants were explained in detail to increase the participants' understanding of emotions.

- Initially, Activity 3 was a role-play where participants were asked to explore how they express emotions towards their pupils. This activity was changed to a ‘replay’ and a group discussion. Participants were asked to share how they express their emotions in a group, and one or two groups were to present one scenario and have feedback from other PSTs. A one-hour session is not enough for a role-play. Therefore, a group discussion that elicits more participant engagement was chosen.
- Activity 4- The University of California Dave’s Set of Emotion Expressions (UCDSEE) was removed. Instead, these cards were used in the introduction to explain different facial emotional expressions.

### ***Session 3: Using and Understanding Emotions***

- In the original intervention, PSTs were asked to think of how the school environment has an impact on their emotions and the way they interact with each other. It was discovered that this activity was not adding value to PSTs as they do not spend a lot of hours in the school environment. Some of the PSTs could not comprehend different school environmental factors that impacted their emotions. Therefore, a decision to focus on the strategies for generating positive moods was made.
- An activity was added where participants were asked to write down ‘three good things’ about themselves. This activity was added in order to assist the participants’ understanding of how they can generate positive moods in themselves.

- Activity 2 in this session included a video about bullying. This activity was extended. For this activity, PSTs were asked to work in groups and asked a set of questions (i.e., what could be the cause of bullying, in general? Was the individual bullied in the video justified? Bullying is a serious issue in schools, what could be done? How would you act?)
- Case studies were removed due to time constraints. The case studies were included to allow participants to understand their emotions in different situations. However, the discussion on bullying opened a space for PSTs to share examples of how they might react in different situations.

#### ***Session 4: Managing Emotions***

- Examples of strategies to manage emotions were added in this session (i.e., mindfulness; situation selection; situation modification; cognitive change & response modulation).
- A mindfulness exercise was also added in this session.

The rationale for all changes is detailed in the next chapter.

### **5.11. Timing & Instruments**

The time was not sufficient for all the activities of the intervention; hence some changes were made, as previously mentioned. Participants took approximately 20 minutes to complete the questionnaires. Due to time constraints, a decision was made to make use of the shorter version of the Utrecht Work Engagement Scale (UWES-S). Consequently, the 3-item UWES scale was chosen for the main study.



### **5.12. Participant recruitment strategies**

Lecturers and administrators were involved in the recruitment stage. This proved to be efficient for participant recruitment. Participants demonstrated their interest and engagement during the recruitment stage and during the sessions. Due to a large participant pool at Time 1, a decision was made to put participants into different groups. However, this process did not go as intended as academic activities piled up, and participants lost track. A student protest that occurred during the data collection period also affected the overall attendance of the participants.

To increase participation in the main study, lecturers, administrators and peers were involved throughout. A WhatsApp group was formed during the recruitment stage, which was an effective communication tool. This platform was mainly used for announcements, reminders, and follow-up discussions that participants deemed necessary. Instead of breaking participants into small groups, lecture halls were used to accommodate all participants involved in the study.

### **5.13. Personal Reflections**

The initial phase of this research project was not without its challenges. The first challenge was the intervention content. A significant amount of time and effort was expended during the process. Whilst the content for the growth mindset part of the intervention was seamlessly found, the EI part of the training was laborious. A review of the literature demonstrated growing research in EI intervention studies. However, upon close examination, few studies clearly stated the intervention content and the overall research process. Multiple existing EI models also contributed to this challenge. Many intervention studies seemed to be

grounded on mixed EI models, with very studies using an ability EI model. Different EI models result in different intervention content and, consequently, inconsistent and unstandardised EI training programmes. A handful of EI training programmes rooted in the ability EI model was used to design the intervention content. Nevertheless, using this model proved to be beneficial and provided more structure as activities and techniques employed were based on the ability EI dimensions.

The second major challenge was recruiting and retaining participants. From observation, it was difficult to recruit participants when the support from relevant stakeholders (e.g. administrative support staff) was minimal. Intervention studies, primarily when conducted in education contexts, need full support from different stakeholders to ensure the successful integration of research with the academic calendar. Participants are vital in the research process, and effective recruitment and retention strategies need to be employed. The literature indicates that while financial incentives are unethically questionable, non-financial incentives can play a significant role in sampling (Groth, 2010). Although this research had limited funding, the challenges experienced during this initial phase allowed the researcher to think about new ways of recruiting participants for the main study.

The final challenge was the time constraints. Initially, the intervention was planned for 2 hours per session, running for four consecutive days. However, due to a busy schedule in the university setting, relevant gatekeepers were willing to accommodate the research for an hour. It was essential for the researcher to adjust since the university resources (e.g., venues and projector) were available only for an hour. This altered the intervention content as activities had to be shortened to fit the scheduled time. Overall, these changes signal the relevance of context when conducting research. The research process does not occur in a vacuum but is

affected by different contextual factors that need to be accounted for. As researchers, we are bound to be flexible and adjust to accommodate the needs of our participants.

#### **5.14. Chapter Summary**

This chapter discussed the findings of a pilot study. The pilot study provided some insights into the viability of the intervention. Despite non-significant results, the feedback form highlighted that the intervention was worthwhile and valuable. The pilot study also provided some feedback on the research process and design. Effective strategies were employed in the main study to ensure the effectiveness of the intervention.

The next chapter details the final intervention with modifications that were sought from the pilot study.

## **CHAPTER 6: A BRIEF GROWTH MINDSET & EMOTIONAL INTELLIGENCE INTERVENTION**

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### **6.1. Overview**

An intervention rooted in mindsets and emotional intelligence (EI) psychological models was designed to encourage preservice teachers (PSTs) to adopt a growth mindset and to enable them to understand their own and others' emotions. Teachers are crucial in the education process and, thus, are expected to hone necessary skills and knowledge, such as child psychology, communication, and effective classroom management strategies (Seaton, 2018). Therefore, the main goal of this intervention was to prepare PSTs by providing them with the tools they can use to deal with challenges in their line of work. This chapter details the theoretical foundations of the intervention, objectives, length, and the rationale for the techniques, activities and materials employed. The manual for this intervention is found in Appendix 8.

### **6.2. Theoretical Foundations**

Two psychological models informed this intervention, i.e., Carol Dweck's (1986) motivational model of achievement (see also Dweck & Leggett, 1988) and Salovey and Mayer's (1990) ability EI model. Carol Dweck's (1986) model outlines two mindsets (i.e., fixed and growth mindsets). A fixed mindset is a belief that personal attributes (i.e., intelligence, emotions, personality) are fixed and cannot be changed or improved (Dweck, 2008). On the other hand, people with a growth mindset believe that their attributes can be

changed and developed over time (Yeager & Dweck, 2012). These mindsets create a meaning framework that guides people's thought processes and behaviour (Dweck & Yeager, 2019).

Research demonstrates that a fixed mindset is associated with negative affect and maladaptive behaviour, whereas a growth mindset is linked with positive emotion and well-adjusted behaviour (King & dela Rosa, 2019; Romero et al., 2014). Interventions teaching a growth mindset have been shown to positively contribute to academic success and the overall well-being of students (Blackwell et al., 2007; Paunesku et al., 2015; Schleider & Weisz, 2018; Yeager et al., 2013). However, empirical research largely focuses on students' mindsets, with little attention given to the mindsets of teachers or prospective teachers.

Gunderson et al. (2013) argued that the environment plays a vital role in the development of these beliefs. Implicit theories infiltrate pedagogical practices and may influence teachers' instructional approaches (Rattan et al., 2012; Rissanen et al., 2019). For instance, a teacher with a growth mindset is more likely to encourage students than the one with a fixed mindset (Zeng et al., 2019). To this end, instilling PSTs with a growth mindset might not only contribute to their well-being but may equip them with the skills they can use to create positive classroom environments.

Moreover, this intervention was also grounded on the ability EI model developed by Salovey and Mayer (1990). This model consists of four elements or dimensions of EI, which include a) Perceiving emotions (i.e. an ability to identify emotions accurately), b) Using emotions (i.e. the ability to use emotions to facilitate thinking), c) Understanding emotions (i.e. the ability to understand emotions) and d) Managing emotions (i.e. the ability to regulate and manage one's and others' emotions) (Salovey & Mayer, 1990). Research posits that EI is a vital concept that contributes to psychological well-being (Mérida-López, & Extremera, 2017;

Salami, 2010). In addition, interventions that seek to develop EI have been found to enhance individuals' well-being and well-adjusted functioning (Beigi & Shirmohammadi, 2011; Ruiz-Aranda et al., 2012).

Furthermore, research indicates that EI interventions are more effective when they are based on sound theory (Beigi & Shumohammadi, 2011). Salovey and Mayer's (1990) ability EI model was chosen on the basis that it is deemed a solid theoretical base for EI interventions (Jordan et al., 2010). Unlike other EI models which are considered too broad, ability EI is well conceptualised and provides clear EI abilities (Cherniss, 2010). Consequently, the intervention was designed on an explicit structure, and the abilities to be developed were explicated.

### **6.3. Objectives of the Intervention**

Learning outcomes were developed to highlight the specific skills and knowledge the participants will acquire after attending the intervention. These guided the selection of learning materials, including content and techniques.

This intervention aimed to teach PSTs to adopt a growth mindset and enhance their EI skills. This was achieved by providing them with relevant information and techniques that they could use to understand their thought processes and behaviour. After the intervention, PSTs were expected to demonstrate self-awareness, identify their own and others' emotions in various situations, understand and use emotions effectively, and be able to manage their emotions. Therefore, learning outcomes included the following: a) Define different mindsets; b) Describe how the brain works and how it can develop and grow through learning; c) Identify and describe one's emotions; d) Describe and demonstrate techniques used to express emotions and how these may affect others; e) Identify and explore different emotions as well as different

facial expressions and body language associated with them; f) Identify and list different strategies used to create positive moods; g) Understand the causes and consequences of emotions; h) Identify and describe strategies that can be used to manage emotions.

#### **6.4. Length of the Intervention**

In deciding the length of this intervention, a review of studies that have conducted mindset interventions and ability EI skills training was conducted. Growth mindset interventions are usually short and consist of clear-cut activities. For example, Blackwell et al. (2007) conducted a growth mindset intervention consisting of 8 sessions. Each session took 25 minutes and was scheduled once per week (Blackwell et al., 2007). The growth mindset intervention by Donhoe et al. (2012) consisted of 4 sessions, and each session took 40 minutes. Yeager et al. (2013) conducted a more extended growth mindset intervention. The intervention consisted of 6 sessions, and each took about 50 minutes, a total of 5 hours (Yeager et al., 2013). A recent, successful intervention conducted by Schleider and Weisz (2018) took only 20-30 minutes. Overall, growth mindset interventions are short and contain a clear message. Therefore, a decision was made for the growth mindset part of the present intervention to be 45 minutes.

For the ability EI part of the intervention, only EI interventions grounded on ability EI were reviewed. EI training programmes are usually conducted for longer periods. Groves et al. (2008) designed an intensive 11-week EI training programme. Nelis et al.'s (2009) EI intervention consist of 4 sessions of two and a half hours, a total of 10 hours. Along similar lines, Pool and Qaulter (2012) developed an EI module based on the ability EI model, which consisted of 11 classes, 2 hours each. Hen and Sharabi-Nov's (2014) EI intervention is a 56-

hour intervention that runs over 14 weeks. However, there also exist shorter EI programmes that have proved to be successful. Brackett and Katulak (2006) developed an evidenced-based EI intervention entitled '*The Emotionally Intelligent Teacher*'. This intervention is grounded on ability EI and is a full-day programme (Brackett & Katulak, 2006). Furthermore, Clarke's (2010) two-day EI programme also demonstrated positive results.

Overall, EI interventions span between a full day (i.e., 8 hours) and 56 hours. Nevertheless, given the busy academic schedule of PSTs, it was not practical to conduct an 8 to 56 hours training programme. This study was purely voluntary and was not part of the academic programme. Thus, in order to avoid high attrition rates, a decision was made that the ability EI segment should be a total of 170 minutes (1 hour for sessions 2 and 3, and 50 minutes for session 4).

### **6.5. Techniques, Activities and Materials**

Various techniques and activities were used in the intervention to facilitate learning, including PowerPoint presentations or mini-lectures, group discussions, short videos, written exercises and reflection exercises. These techniques are essential and have been used in several EI training programmes (Hen & Sharabi-Nov, 2014; Nelis et al., 2009; Pool & Qualter, 2012).

Materials included handouts and the workbook containing parts of the presentation and activities. However, not all students used the workbook. Many of them worked through the activities in their exercise books. The rationale for these techniques and activities is detailed below.



## **6.6. Course Content and Description**

The training programme consisted of five main topics delivered in four sessions. The rationale for each topic, activity and material selected is discussed below.

### **6.6.1. Session One: Mindsets**

This session, titled '*Mindsets*', was included to assist PSTs in understanding different implicit theories as described by Dweck (1986). The purpose of this session was to provide a clear distinction between a fixed and a growth mindset as well as the consequences of adopting each mindset.

In this session, the researcher explained the different mindsets in terms of abilities, goal orientation, effort, mistakes, feedback and reactions to setbacks. This was to ensure that participants were provided with a broad understanding of the different mindsets. The role of language was also highlighted. This is critical as research demonstrates that mindsets are influenced by the environment (Blackwell et al., 2007). The way parents and teachers interact with the students may play a role in the development of a certain belief (Gunderson et al., 2013).

Moreover, this session included how neuroscience supports a growth mindset. The Hebbian theory by Hebb (1949) was used to explain how the neurons grow and adopt a certain pattern of thinking. According to Hebb (1949, p.62) “when an axon of cell A is near enough to excite a cell B and repeatedly or persistently takes part in firing it, some growth process or metabolic change takes place in one or both cells such that A’s efficiency, as one of the cells firing B, is increased” (Hebb, 1949, p. 62). This means that a neural network is formed with every repeated thinking process and behavioural pattern. Most importantly, the brain can rewire and change these neural connections through learnt behavioural patterns (Wang & Orchard,

2017). This part is significant in teaching a growth mindset. For emphasis, a video of how the cells in the brain grow and develop was shown. Previous interventions have also used this video to demonstrate brain neuroplasticity (e.g., Blackwell et al., 2007; Schleider & Weisz, 2018; Yeager et al., 2013).

As part of an activity, participants were asked to read through an article entitled ‘You can grow your intelligence’. This article is used in almost all growth mindsets interventions (e.g., Blackwell et al., 2007; Yeager et al., 2013). After reading the article, participants were asked to write a letter to their future learners explaining to them how the brain can change and how they can use it to learn new things. This is called the ‘saying is believing task’. This task is important and has been deemed effective in many growth mindset interventions (Blackwell et al., 2007; Yeager et al., 2013). It is argued that when people are asked to communicate the message to someone else, it allows them to understand the message and can lead them to challenge their beliefs whilst accepting the notions of the message (Aronson, 1999; Yeager et al., 2016).

The following sessions focus on the four dimensions of EI as described by Salovey and Mayer (1990).

### **6.6.2. Session Two: Introduction to Emotional Intelligence (Perceiving Emotions)**

After session 2, participants were expected to understand EI and be able to identify and describe their own or others’ emotions. The session kicked off with an exercise where participants were asked to think about their personalities in terms of extroversion and introversion. These preferences are a part of the Myers-Briggs Type Indicator (MBTI), a

personality instrument developed by Isabel Briggs Myers and Katherine Briggs (The Myers & Briggs Foundation, n.d). The MBTI is widely used and applied in various contexts, such as in coaching, counselling and career guidance, and has also been considered a powerful tool for deep self-awareness (Brott, 2004; Jafrani, 2014). In this session, the researcher described the two preferences (i.e., extroversion and introversion), and participants were asked to categorise themselves based on these descriptions. This exercise aims to build self-awareness and a deep understanding of one's and others' preferences. The aim was for participants to understand themselves and appreciate their differences.

In this session, the role of emotions in decision-making was clearly explained. Using Goleman's (1995) notion of 'emotional hijacking', the role of emotions in behaviour and thinking was elucidated. Furthermore, an overview of EI as conceptualised by Salovey and Mayer (1990) was given, and this includes perceiving emotions, using emotions, understanding emotions and managing emotions. As part of an activity, PSTs were asked to discuss why EI is important and how they intend to use the information they will gain throughout the EI sessions. The main aim of this discussion was for PSTs to understand the value of EI and how they can implement the information they gained throughout the EI sessions. Konarcki and Caruso (2007) maintained that explaining the payoffs of an EI training programme is crucial for participants to understand the importance and benefits of EI.

The second part of this session dealt with the first dimension of EI, i.e. perceiving emotions (Mayer, Salovey & Caruso, 2008). According to Salovey and Mayer (1990), perceiving emotions is the ability to identify emotions accurately. The activities included here tackle both the ability to recognise emotions in oneself as well as in others. The first activity for this part included the 'Mood Meter' adapted from Kornacki and Caruso's (2007) EI intervention. For this activity, PSTs were asked to mark their current mood on a 5-point scale,

ranging from unpleasant to pleasant. The main aim of this activity was to guide self-awareness and enable PSTs to practise the self-identification of emotions. The Mood Meter is largely used in EI training programmes and has proved to be an effective tool for identifying emotions and understanding their causes and consequences (Brackett et al., 2013).

The second activity for the first dimension was a ‘replay’ where PSTs were asked to think of the way they express their emotions in the school environment or their personal space. In this activity, participants were asked to think about a certain situation or experience they had encountered. They were then asked to think about the people who were involved in the situation and describe how this situation affected them and how they expressed their emotions verbally or non-verbally. PSTs were also asked to think about what they could have done differently and about different strategies they could have employed to express their emotions. The rationale behind this activity was taken from Hen and Sharabi-Nov’s (2014) ability EI intervention among teachers. The main purpose was to allow PSTs to reflect on the way they express emotions in different situations.

### **6.6.3. Session Three: Using and Understanding Emotions**

This session addressed the following intervention outcomes: demonstrate an ability to identify and list different strategies used to create positive moods and be able to understand the causes and consequences of emotions. In the first part of the session, the ‘using emotions’ dimension of EI was explained. For this part, PSTs had to do two activities. They had to list three good things about themselves and the positive emotions they experienced in the day. PSTs were also asked to discuss how they generate positive moods in themselves. The main purpose of these activities was to enable PSTs to understand different ways of generating positive emotions in order to enhance their motivation, engagement, attention and overall well-

being. The ‘three good things’ exercise is part of Seligman et al.’s (2005) positive psychology interventions. The rationale behind this activity is for participants to appreciate good things happening in their lives. This activity has been used in several studies and has been shown to contribute to overall well-being (Mongrain & Anselmo-Matthews, 2012; Proyer et al., 2014).

The second part of this session dealt with the ‘understanding emotions’ dimension of EI. This dimension involves the ability to understand emotions and their causes and consequences (Salovey & Mayer, 1990). A video about bullying was shown. This video consists of a pupil who has been subjected to bullying at school for a long time. The bullied pupil ended up committing a crime and hurting the perpetrator. After watching the video, preservice teachers were asked to discuss the possible causes that led to the behaviour demonstrated in the video and whether the behaviour was justifiable. This activity aimed to demonstrate that emotions may cause dire consequences if they are not managed effectively.

Furthermore, participants were asked to think of a challenging situation (e.g., a misbehaving pupil at school) that they have experienced either in a school environment or in their personal lives and try to understand their behaviour in that situation. This activity was chosen because it allowed individuals to reflect more and think about their own emotions and reactions in difficult situations. A similar tactic was used by Hen and Sharabi-Nov (2014) in their EI training for teachers. In their intervention, teachers were shown a video about bullying and asked to identify their emotional states and needs and reflect on their emotions in a challenging situation (Hen & Sharabi-Nov, 2014).

#### **6.6.4. Session Four: Managing Emotions**

After this session, PSTs were expected to demonstrate an understanding of different strategies used to manage emotions. This session dealt with the ‘managing emotions’ EI

emotions, which refers to effectively regulating and managing one's emotions (Salovey & Mayer, 1990). This session commenced with a debrief about the previous sessions. Participants were asked to reflect and share their learnings.

Thereafter, an explanation of the 'managing emotions' dimension was provided. This was supplemented by Gross's (2008) different emotion regulation strategies (i.e., situation selection, situation modification, attentional deployment, cognitive change or cognitive reappraisal and response modulation). Emotion regulation strategies were included for participants to understand different techniques, but most importantly, positive strategies (i.e., cognitive reappraisal) they can employ to manage their emotions. Cognitive reappraisal refers to changing emotions by altering how one thinks about the situation (McRae et al., 2012). This emotion regulation strategy has been associated with positive outcomes such as well-being (Haga et al., 2009; King & dela Rosa, 2019).

Furthermore, as part of this session, PSTs did a mindfulness exercise. Mindfulness is a practice that channels the mind to focus on the present moment (Creswell, 2017). This technique has been associated with effective emotion regulation, meaning that it is a positive emotion management strategy (Hill & Updegraff, 2012; Roemer et al., 2015). It is presumable that mindfulness shares a positive link with EI. Schutte and Malouff (2011) argue that mindfulness may help individuals accurately perceive their emotions and others' emotions and help build the capacity to control emotions effectively. To this effect, this exercise was essential to this intervention as it assisted in EI capabilities.

This session concluded with participants reflecting on the activities and a discussion about different strategies for controlling emotions. A summary of all sessions was also provided at the end of this session.

## **6.7. Chapter Summary**

This chapter provided a detailed description of the main intervention. The design of the intervention, which included its objectives, content, materials and activities, was guided by the theoretical foundations of this intervention. In order to ensure that all objectives were met and that all activities were done effectively, a manual that provided all the guidelines was used. The manual is included in Appendix 8.

The next chapter details the psychometric properties of the measurements used in this study.

## **CHAPTER 7 (STUDY 2): INVESTIGATING THE PSYCHOMETRIC PROPERTIES OF THE MAIN INSTRUMENTS**

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### **7.1. Study Overview**

This study addresses the second research question of the thesis (i.e. *what are the psychometric properties of the six main instruments used?*). It aims to investigate the psychometric properties of the Wong and Law Emotional Intelligence Scale (WLEIS), Implicit Theories of Intelligence Scale (ITI-S), Implicit Person Theory Scale (ITP-S), Implicit Theories of Emotion Scale (ITE-S), Organisational Citizenship Behaviour Scale (OCB-S) and the Utrecht Work Engagement Scale (UWES). The findings of this study will ascertain whether these scales are reliable and valid for South African preservice teachers (PSTs).

A review of the literature on each instrument is presented below.

### **7.2. Investigating the measurement structure of the WLEIS in the South African context**

The Wong and Law Emotional Intelligence Scale (WLEIS) is a prominent, widely used self-report-based measure of EI (Libbrecht et al., 2014; Wong & Law, 2002). This instrument was developed by Wong and Law (2002) in Hong Kong. It consists of 16-items, with four dimensions based on Salovey and Mayer's (1990) four-branch ability EI model. Self-Emotional Appraisal (SEA)- relates to the individual's ability to understand and express their emotions effectively; Other's Emotional Appraisal (OEA)- the ability to perceive and understand other's emotions; Regulation of Emotion (ROE)- is concerned with the ability to



regulate and control one's emotions; Use of Emotion (UOE)- refers to the ability to effectively use emotions to solve problems and achieve personal goals (Wong & Law, 2000; Wong et al., 2004).

Since its inception in China, the WLEIS has been translated and adapted to many cultural contexts, such as in Japan (Fukuda et al., 2011), Pakistan (Karim, 2010), Chile (Acosta-Prado & Zárate-Torres, 2019), Portugal and Spain (Cavalho et al., 2016; Belgium and Singapore (Libbretch et al., 2014) and in Italy (Iliceto, & Fino, 2017). A body of research generally supports the four-factor structure of the WLEIS, which confirms four dimensions in the measurement model (Kong, 2017; Law et al., 2004; Wong & Law., 2002). Some studies also reveal a good fit of a second-order model, which suggests that these four factors contribute to the global EI construct (Kafetsios & Zampetakis, 2008; Iliceto & Fino, 2017; Wong & Law, 2002). However, a recent study by Di et al. (2020) indicated that although both models are satisfactory, a four-factor structure is more robust than the second-order model.

Despite its popularity and widespread use, there seems to be a lack of validation studies of the WLEIS in African countries, particularly South Africa. Studies conducted in South Africa, e.g., Kanonuhwa et al. (2018), reported a strong internal consistency of this scale, suggesting good reliability. However, investigations must go beyond item analysis to ascertain the validity of the measure. One study by El Ghoudani et al. (2018) attempted to validate the WLEIS in Morocco, a country situated in North Africa. Results did not demonstrate strong support for the four-factor structure, with one item loading below the acceptable threshold of .30 and one non-significant item loading (El Ghoudani et al., 2018). These bleak results necessitate more validation studies of the WLEIS in Africa.

An investigation of the construct validity of a psychological measure such as the WLEIS is essential and is an acknowledgement of cultural differences. According to Cronbach and Meehl (1995), as cited in Notelaers and Van der Heijden (2021), construct validity is critical as it investigates if the items of the scale measure what it purports to measure. Markus and Kitayama (1991) contend that cultural values mould a person's schema to shape emotional meanings and experiences. Consequently, culture impacts how individuals understand and express emotions, which is a foundation for EI behaviours (Scott-Halsell et al., 2013). To this effect, a reliable and valid measure of EI is crucial to ensure the appropriateness of this scale across cultures. Therefore, this investigation contributes to the broader EI research knowledge by uncovering the viability of the WLEIS in the South African context.

Following existing literature (e.g. Wong & Law, 2002), two models were tested, i.e., the four-factor and the second-order model. The main aim of this analysis is to examine and compare these two solutions using the South African PSTs' sample. This analysis will reveal the model that provides the best fit for data. The findings of this investigation will inform subsequent analyses. It will determine whether the WLEIS is a multidimensional measure consisting of four interrelated sub-scales that explain the global EI factor. If the existence of a latent global EI factor is confirmed, both the total score of the WLEIS and sub-factors of this scale will be included in subsequent analysis.

## **7.2.1. Method for Analysing the WLEIS**

### **7.2.1.1. *Participants***

The data used to investigate all the main measures consisted of participants from the two Universities who completed questionnaires at Time 1. A total of 305 final-year PSTs completed the questionnaires at this time point. Only one participant was excluded due to

excessive missing data. In total, 304 participants were included in the final analysis. Female participants consisted of 61.8% (188) of the sample, whilst 116 (38.2%) were male. Among them, 295 (97.0%) fell in the 21-30 age group; 4 (1.3%) in the 31-40 age group; 3 (1.0%) in the 20years and below group, and only 2 (1.7%) in the 41 years and above age group. The majority of the participants majored in Maths, Science & Technology = 122 (40.1%), 85 (28.0%) in Social Sciences, 81 (26.6%) in Economics and Management Science, and only 11 (3.6) with a major in Life Orientation and Language Education.

#### **7.2.1.2.        *The WLEIS Measure***

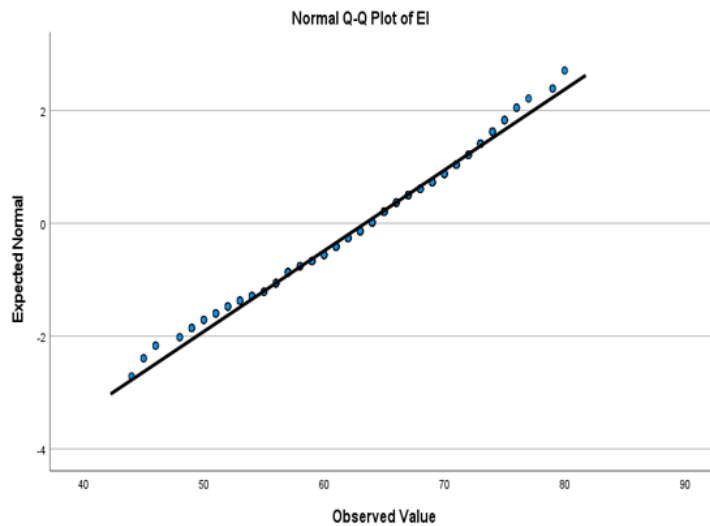
The WLEIS consists of four dimensions, i.e. SEA is the ability to understand and express emotions(e.g. I have a good sense of why I have certain feelings most of the time); OEA is the ability to perceive and understand others' emotions (e.g. I always know my friends' emotions from their behaviour); UOE is the ability to make use of emotions to make decisions and achieve personal goals (e.g. I always set my goals for myself and then try my best to achieve them), and ROE is the ability to regulate emotions (e.g. I am able to control my temper so that I can handle difficulties rationally) (Law et al. 2004; Wong & Law, 2002). This scale consists of 16 items measured on a 5-point Likert scale (1= strongly disagree; 5= strongly agree). All items are positively worded, and total scores were calculated by summing the scores. A high total score represents high EI.

#### **7.2.2. Preliminary Analysis**

Descriptive statistics and normality of data were assessed using the Statistical Package for Social Sciences (SPSS) version 27. All extreme outliers were deleted and upon close introspection of the Normal Q-Q Plot (see Figure 7.1), data slightly deviated from a normal distribution.

**Figure 7.1**

*Normal Q-Q Plot of the WLEIS*



*\*Note, WLEIS = Wong and Law Emotional Intelligence Scale*

Table 7.1. below presents the mean scores and the standard deviations of the WLEIS and its subscales for the total sample and gender. Overall, gender differences on the WLEIS were negligible i.e., Males ( $M = 63.40$ ;  $SD = 6.10$ ); Females ( $M = 63.41$ ;  $SD = 7.01$ ). Reliability analysis was conducted for the total WLEIS and its subscales. The Cronbach's alpha values were .81 for the total scale; SEA = .73; OEA = .70; UOE = .75 and ROE = .83. These values suggest a good internal consistency of the WLEIS.

Moreover, these findings are consistent with other research studies. Wong and Law (2002) reported good internal consistency reliabilities, which ranged from .83 to .90. Using a Chinese sample, Wang and Kong (2014) reported Cronbach alphas ranging from .75 to .88 for the subscales and .85 for the total scale. The reliability of the WLEIS has also been tested in other countries outside China. Sulaiman and Noor (2015) indicated good reliability of the

WLEIS, with Cronbach alphas ranging from .83 to .92. Carvalho et al. (2016) used a Portuguese and Spanish sample to investigate the reliability of the scale. They reported good internal consistency reliabilities, which ranged from .83 to .89 (Carvalho et al., 2016).

**Table 7.1**

*The means and standard deviations of the WLEIS*

	Whole Sample	Male	Female
	M (SD)	M (SD)	M (SD)
Total WLEIS	63.40 (6.10)	63.39 (6.98)	63.41 (7.01)
SEA	16.00 (2.41)	16.11 (2.29)	15.93 (2.48)
OEA	14.72 (2.52)	14.52 (2.65)	14.84 (2.43)
UOE	17.37 (2.10)	17.62 (1.97)	17.15 (2.15)
ROE	15.67 (2.91)	15.62 (2.77)	15.70 (3.01)

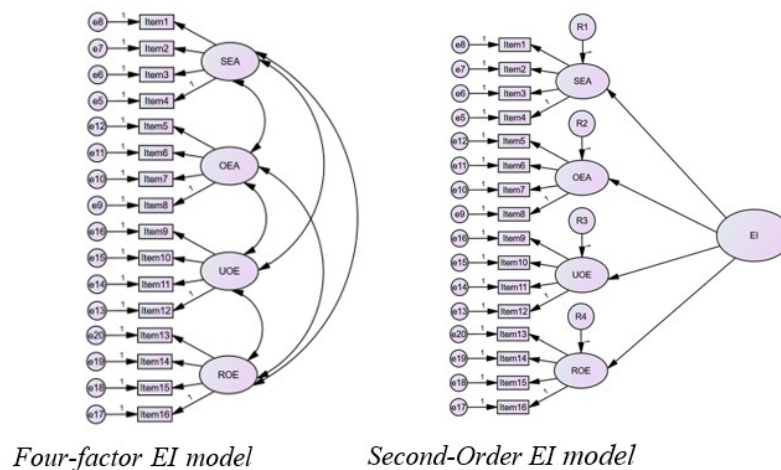
*\*Note: M = Means; SD = Standard Deviations; WLEIS = Wong and Law Emotional Intelligence Scale; SEA= Self-Emotion Appraisal; OEA= Others' Emotional Appraisal; UOE= Use of Emotion; ROE= Regulation of Emotion*

### 7.2.3. Model Specification for the WLEIS

Wong and Law (2002) confirm both a four-factor model and a second-order EI model (see Figure 7.2. below).

**Figure 7.2**

*The four-factor and the second-order EI models*



*\*Note: EI = Emotional Intelligence. SEA = Self-Emotion Appraisal. OEA = Other's Emotion Appraisal. UOE = Use of Emotion. ROE = Regulation of Emotion. Observed variables. Item1 to Item16 = 16 items of the Wong and Law Emotional Intelligence Scale.*

A literature review verifies these solutions (Kafetsios & Zampetakis, 2008; Kong, 2017; Iliceto & Fino, 2017). Following this literature, two models were analysed in this investigation. The four-factor model assumes that WLEIS items present four interrelated factors. On the other hand, the second-order model assumes that these factors are explained or caused by an underlying higher-order EI dimension (Bryne, 2005). This analysis aims to test and examine the model that best fits the data in the South African context.

AMOS 26 was used to conduct Confirmatory Factor Analysis (CFA) to assess the four-factor and the second-order models of the WLEIS. CFA is the appropriate tool for testing the extent to which a theoretical model represents the data (Hair et al., 2014). The WLEIS is a well-established instrument with a determined structure (Wong & Law, 2002). Thus, a CFA was chosen on the basis that it is a theoretically grounded analysis and allows for the underlying factors to be tested a priori (Bryne, 2005). Moreover, preliminary results indicated that data slightly deviated from a normal distribution. Hence, CFA with Maximum Likelihood Estimation (MLE) was used to assess the models and to resolve the issue of nonnormality (Hair et al., 2014; Lei & Schiverdecker, 2020). The following measures of fit were used to evaluate the models i) The Tucker Lewis Index (TLI); ii) The Comparative Fit Index (CFI); and the Root Mean Square Error of Approximation (RMSEA) (Hair et al., 2014).

The chi-square statistics is also among the goodness of fit indices; however, it was not used in this investigation because it is largely affected by the sample size (Hair et al., 2014). For the TLI and CFI, values higher than .90 indicate a good fit (Hair et al., 2014). The RMSEA value of less than .05 indicates a good fit for the model, however, values between .05 and .08 suggest a reasonable fit, whereas values higher than .10 indicate a poor fit (Hair et al., 2014; Kline, 2011). In addition to these criteria, the parsimony fit measures were used to compare the two alternative models. The principle of parsimony is crucial in assessing the model (Hu & Bentler, 1995; Schermelleh-Engel et al., 2003). A parsimonious model is said to be a simple model with good predictive power (Vandekerckhove et al., 2014).

In this investigation, the Akaike Information Criterion (AIC) and the Expected Cross-Validation Index (ECVI) values were used to test parsimony. These two indexes are largely used by researchers to compare alternative models, e.g., Chen et al. (2018) and Di et al. (2020). The model with lower AIC and ECVI values best fits the data (Schermelleh-Engel et al., 2003).

#### 7.2.4. Results from the CFA

The four-factor model (see Table 7.3. & Figure 7.3) was shown to be satisfactory as per the applied goodness of fit indices;  $\chi^2 (98) = 178.145, p < .001$ , CFI = .94, TLI = .92 and RMSEA = .05. The factor loadings met the minimum level as specified by Hair et al. (2014) and ranged from .42 to .81, and were all significant at  $p < .001$ . Correlations between factors were moderate and ranged from .34 to .45, suggesting discriminant validity. The second-order model (see Table 7.3. & Figure 7.4) also indicated the best fit to data  $\chi^2 (100) = 178.462, p < .001$ , CFI = .94, TLI = .92 and RMSEA = .05. The factor loadings ranged from .54 to .69 and were all significant ( $p < .001$ ). This goodness of fit results indicates that there is no significant difference between the two models based on the fit indices. However, the second-order model had smaller values of the AIC and the ECVI (AIC = 282.462; ECVI = .932) than the four-factor model (AIC = 286.145; ECVI = .944). These findings suggest that the second-order model is more parsimonious. Therefore, this model will be used in subsequent analysis. Emotional intelligence, as specified by the WLEIS, will be considered a global factor as well as a multidimensional factor that is well operationalised by four factors.



**Table 7.2***Standardised parameter estimates of the four-factor model and the second-order model*

Dimensions	Model 1 (First Order- Four factor Model)	Model 2 (Second-Order Model)
	Standardised Factor; p-value	Standardised Factor; p-value
<b>SEA</b>		.655; <.0001
Item 1	.596; <.0001	
Item 2	.707; <.0001	
Item 3	.713; <.0001	
Item 4	.516; <.0001	
<b>OEA</b>		.542; <.0001
Item 5	.639; <.0001	
Item 6	.730; <.0001	
Item 7	.423; <.0001	
Item 8	.673; <.0001	
<b>UOE</b>		.691; <.0001
Item 9	.607; <.0001	
Item 10	.580; <.0001	
Item 11	.739; <.0001	
Item 12	.728; <.0001	
<b>ROE</b>		.653; <.0001
Item 13	.799; <.0001	
Item 14	.778; <.0001	
Item 15	.598; <.0001	
Item 16	.805; <.0001	

*\*Note: SEA= Self-Emotion Appraisal; OEA= Others' Emotional Appraisal; UOE= Use of Emotion; ROE= Regulation of Emotion*

**Table 7.3**

*Goodness of Fit Indices for the WLEIS four-factor and second-order models*

Indices	Four-Factor WLEIS Model	Second-Order WLEIS Model
$\chi^2$	178.145	178.462
Degrees of Freedom	98	100
p	.000	.000
<b>RMSEA</b>	.052	.051
90% CL	.040 - .064	.039- .063
pclose	.381	.437
CFI	.941	.943
TLI	.919	.922

*\*Note:  $\chi^2$  = chi-square; df = degrees of freedom; TLI= Tucker Lewis Index; CFI = comparative fit index, and values greater than .90 indicate a good model fit; RMSEA = root mean square error of approximation, and values smaller than .08 indicate a reasonable fit*

Figure 7.3: Four-Factor CFA Model of the WLEIS

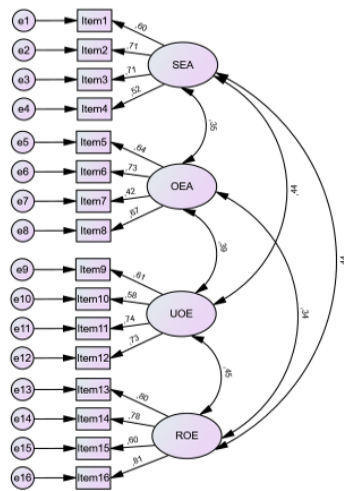
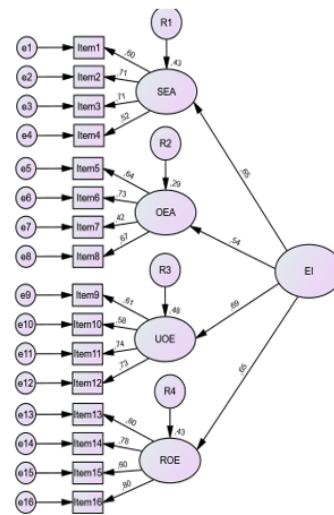


Figure 7.4: Second-Order CFA Model of the WLEIS



*\*Note: SEA= Self-Emotion Appraisal; OEA= Others' Emotional Appraisal; UOE= Use of Emotion; ROE= Regulation of Emotion; EI= Emotional Intelligence; Item 1- to Item 16= Items of the WLEIS*

### **7.2.5. Discussion on the WLEIS Factor Structure**

This investigation aimed to test Wong and Law's (2002) WLEIS factor structure in a South African sample. Results demonstrated that this instrument is reliable, as indicated by high Cronbach's alphas of the overall EI scale and its sub-scales. These findings are consistent with those found in other studies (Cavalho et al., 2016; Sulaiman & Noor, 2015; Wang & Kong, 2014; Wong & Law, 2002). Moreover, consistent with existing literature (e.g., Fukuda et al., 2019; Pacheco et al., 2019; Wong & Law, 2002), the CFA results confirmed both the four-factor structure and the second-order model. However, despite acceptable fit indices for both models, the second-order model was more parsimonious, suggesting strong predictive power. The principle of parsimony indicates that models should be chosen based on their simplicity and best fit to data (Vandekerckhove et al., 2014). This finding, in particular, is inconsistent with Di et al.'s (2020) research study, which revealed that the four-factor model is more parsimonious than the second-order model in a sample of Chinese adolescents. Thus, more research is needed to compare these alternative models using different samples.

In summary, both these models are satisfactory. However, the second-order model was found to be more parsimonious than the four-factor structure. Thus, the second-order model will be used in subsequent analysis, where the global EI factor and the four factors of EI will be used in the analysis.

The following section evaluates the psychometric properties of the implicit theory measures (i.e., implicit theories of intelligence, implicit theories of personality and implicit theories of emotion).

### **7.3. Evaluating the Reliability of the Implicit Theory Measures in the South African Context**

Over the past two decades, there has been growing interest in the impact of implicit theories or mindsets in educational settings (Hughes, 2015). The mindset theory (i.e., Dweck 1986; Dweck & Leggett, 1988) distinguishes between an entity theory (i.e., fixed mindset) and an incremental theory (i.e., growth mindset). Entity theorists believe that human attributes are fixed and not amenable to change, whereas individuals who endorse an incremental theory believe that they can develop and improve their capabilities over time (Dweck & Yeager, 2019; Yeager & Dweck, 2012). Research posits that mindsets predict motivation and behaviour where a fixed mindset has been associated with adverse outcomes such as negative affect and lower academic achievement, and a growth mindset with positive affect and higher performance (Blackwell et al., 2007; King et al., 2012; Macakova & Wood, 2020; Shih, 2011; Yeager & Dweck, 2012).

A theory of mindset has gained considerable support in the literature. Nevertheless, research investigating the validity of the implicit theory scales is scant (Hughes, 2015). The domain-specificity of implicit theories further complicates the validity of the measures. Proponents of mindsets argue that implicit theories are domain-specific, meaning that people can hold different beliefs about any personal attribute in any domain, such as intelligence, personality, moral character, emotion, etc. (Dweck & Master, 2008; Molden & Dweck, 2006). The present study focused on implicit theories of intelligence (i.e. beliefs about the nature of intelligence), personality (beliefs about the nature of personality traits) and emotion (i.e. beliefs about the nature of emotions) because these attributes are deemed significant in educational contexts (Yeager & Dweck, 2012).

Widely used measures were employed in the study, and this includes the implicit theories of intelligence scale developed by Dweck et al. (1995), the measure of implicit person theories by Chui et al. (1997) and the implicit theories of emotion scale developed by Tamir et al. (2007). In line with previous research, both implicit measures of intelligence (e.g. *‘you can have a certain amount of intelligence and you really can’t do much to change it’*) and personality (e.g. *the kind of person someone is, is something very basic about them and it can’t be changed very much’*) consisted of three items measuring only a fixed mindset (Chiu et al., 1997; Dweck et al., 1995; Gonida et al., 2006).

Chiu et al. (1997) and Dweck et al. (1995) recommend using these three-item scales with only a fixed mindset because it has been argued that if both growth mindset and fixed mindset items are included, participants tend to choose growth mindset items (Chiu et al., 1995). Thus, this controls potential social desirability issues (Chiu et al., 1997; Dweck et al., 1995; Spinath & Stiensmeier-Pelster, 2001). Furthermore, the developers of these scales addressed some critical concerns associated with the scoring and interpretation of these single-sided measures. There have been doubts that a disagreement with fixed mindset items indicates a growth mindset (Lüftenegger & Chen, 2017; Spinath and Steinsmeier-Pelster, 2001). However, Henderson (1990), as cited in Dweck et al. (1995), addressed these concerns in a study where participants were given an implicit theory measure and were asked to explain their answers. Findings of this study found that respondents who disagreed with fixed mindset items gave clear explanations that aligned with a growth mindset (Henderson et al., 1990, as cited in Dweck et al., 1995).

A literature review demonstrates very high internal consistencies ranging from  $a = .94$  to  $.98$  for the implicit theories of intelligence scale, suggesting that this is a reliable and valid measure (Dweck et al., 1995; Hong et al., 1999). Other studies have demonstrated lower but

good internal consistencies. For instance, Gonida et al. (2006) reported Cronbach's values of .67 and .72, and Warren et al. (2019) reported a value of .65. Nevertheless, noteworthy to mention that Cronbach's alpha values are largely affected by the number of items (Cortina, 1993 as cited in Samuels, 2015; Pallant, 2007). Thus, given that this measure consists of a few items, these findings are fathomable. High internal consistencies have also been reported for the measure of implicit person theories. Chiu et al. (1997) reported Cronbach's alphas ranging from .73 to .90.

Furthermore, unlike the implicit measure of intelligence and personality, the implicit theory of emotion scale consisted of both fixed mindset (e.g., *no matter how hard they try, people can't really change the emotions they have*) and growth mindset items (e.g., *everyone can learn to control their emotions*). Growth mindset items were included to provide a more balanced scale. This scale was developed by Tamir et al. (2007) using students in the U.S. This scale has demonstrated good internal consistencies ranging from .68 to .84 (De Castella et al., 2013; De France & Hollenstein., 2021; Kappes & Schikowski, 2013; King & dela Rosa, 2019; Moumne et al., 2020; Tamir et al., 2007).

Nevertheless, despite solid evidence suggesting the reliability of the implicit theory measures, there seems to be a lack of research investigating the validity of these measures in other contexts. To this effect, this investigation aims to explore the reliability of implicit theory scales using a South African sample. In light of previous research, it was predicted the implicit theory measure of intelligence, personality, and emotion will demonstrate high reliability.

Following previous research, fixed mindset items were reverse-scored to ensure that higher scores reflect a growth mindset. All items were averaged to form an implicit theory

score, and lower mean scores were classified as a fixed mindset, whereas higher mean scores were classified as a growth mindset (Blackwell et al., 2007; Dweck et al., 1995).

### **7.3.1. Method for Analysing the Implicit Theory Measures**

Due to the small number of items in these scales, a confirmatory factor analysis (CFA) was not used to test the validity of these measures. CFA with less than four items leads to a just-identified model, which denotes that a model fits perfectly (Hair et al., 2017). Just identified models consist of zero degrees of freedom and do not report fit indexes (Ribeiro et al., 2011). As such, inter-item correlations and Cronbach's alpha reliability analysis were conducted to determine the internal consistency of these measures. This is an appropriate and one of the most used methods to measure scale reliability (Bonett & Wright, 2015). George and Mallery (2003, p. 231) presented the following rules of thumb as a means of interpreting the Cronbach's alpha, “ $\alpha > .9$  – Excellent,  $\alpha > .8$  – Good,  $\alpha > .7$  – Acceptable,  $\alpha > .6$  – Questionable,  $\alpha > .5$  – Poor, and  $\alpha < .5$  – Unacceptable”. Inter-item correlations are also essential. If all items are measuring the same construct, they are expected to correlate (Piedmont, 2014). As a rule of thumb, inter-item correlations should range between .2 and .4 (Briggs & Cheek, 1986). However, Clarke and Watson (1995) suggested that the optimal inter-item correlation falls between .15 to .50. For a higher-order construct, a mean inter-item correlation as low as .15 to .20 is desirable, whereas, for a narrow construct, much higher inter-item correlations are acceptable (Clarke & Watson, 1995).

### **7.3.2. Results & Discussion on the Reliability of the Implicit Theory Measures**

Table 7.4 below presents the inter-item correlations of the ITI, ITP and ITE scales. Cronbach's alpha values of the measures are also presented.

**Table 7.4***Inter-item correlations and Cronbach's alphas of the ITI, ITP and ITE scales*

Scale Items					<i>a</i>
<b>ITI</b>	1	2	3		<b>.74</b>
1. You have a certain amount of intelligence, and you really can't do much to change it	1	.67	.34		
2. Your intelligence is something about you that you can't change very much	.67	1	.43		
3. You can learn new things, but you can't really change your basic intelligence	.34	.45	1		
<b>ITP</b>	1	2	3		<b>.68</b>
1. The kind of person someone is, is something very basic about them and it can't be changed very much	1	.39	.33		
2. People can do things differently, but the important parts of who they are can't really be changed	.39	1	.53		
3. Everyone is a certain kind of person, and there is not much that can be done to really change that	.33	.53	1		
<b>ITE</b>	1	2	3	4	<b>.46</b>
1. Everyone can learn to control their emotions	1	.41	.01	.02	
2. If they want to, people can change the emotions they have	.41	1	.18	.09	
3. No matter how hard they try, people can't really change the emotions they have (R)	.01	.18	1	.38	
4. The truth is, people have very little control over their emotions (R)	.02	.09	.38	1	

*\*Note: ITI= Implicit Theories of Intelligence; ITP= Implicit Theories of Personality; ITE= Implicit Theories of Emotion*



For the implicit theories of intelligence scale, all items were positively correlated. Inter-item correlations were also fairly acceptable, ranging from .34 to .67. Overall, Cronbach's alpha for this scale was acceptable ( $\alpha = .74$ ) in accordance with George and Mallery's (2003) rules of thumb. Similarly, the scale measuring the implicit theories of personality also showed positively associated items, with inter-item correlations ranging from .33 to .53. The Cronbach's alpha for this scale was also acceptable ( $\alpha = .68$ ). These findings are consistent with past research to some extent. For example, using a sample of students based in Greece, Gonida et al. (2006) reported Cronbach's alpha values of .67 and .72 for the implicit theories of intelligence scale. Similarly, Warren et al. (2019) revealed a slightly lower but acceptable Cronbach alpha value of .65.

Although the implicit theories of intelligence scale revealed an acceptable Cronbach's alpha in this research, a value of .74 is lower than the values found by the developers of the scale (i.e., .94 to .98) (Dweck et al., 1995). Similarly, for the implicit theories of personality scale, the Cronbach's alpha reported in this research (i.e.,  $\alpha = .68$ ), albeit acceptable, was slightly lower than values reported in other studies. For instance, Chui et al. (1997), the founders of this scale, reported values ranging from .73 to .90. This suggests that even though the values are acceptable, there is a need to further investigate the reliability of these scales in other contexts.

The opposite was observed in the implicit theories of emotion scale. This scale presented questionable inter-item correlations ranging from .01 to .41 and a poor Cronbach's alpha value of .46. This finding is inconsistent with previous research. Previous literature reveals Cronbach's alphas ranging from .68 to .84 for the implicit theories of emotion scale (De Castella et al., 2013; De France & Hollenstein, 2021; Kappes & Schikowski, 2013; King & dela Rosa, 2019; Moumne et al., 2020; Tamir et al., 2007). Nevertheless, upon close

examination, results showed that the growth mindset items correlated well with each other ( $r = .41$ ) and the same with fixed mindset items ( $r = .38$ ). This is not uncommon in scales with positive and negatively worded items (Salazar, 2015). Researchers posit that negatively worded items tend to highly correlate with each other (Salazar, 2015). Most importantly, Chyung et al. (2018) noted that a mixture of negative and positive items has an adverse impact on the reliability of the scale, where scales with negatively worded items have been shown to have lower internal consistencies.

Overall, this raises significant questions about the mixture of growth mindset and fixed mindset items and the unidimensionality of this measure. Due to wide use and strong internal consistencies that have been reported in previous studies, this scale was retained and used in subsequent analysis. However, more research needs to be done to ascertain the reliability of the scale and the viability of mixing growth and fixed mindset items.

#### **7.4. An Evaluation of the Factor Structure of the Organisational Citizenship Behaviour Scale (OCB-S) using the South African sample**

The construct of organisational citizenship behaviour (OCB) is gaining momentum in the fields of psychology and management (Mohammad et al., 2011). The notion of OCB stemmed from Katz (1964), who argued that organisations that depend solely on in-role behaviour are fragile and, thus, are likely to be crippled by inefficiency. Katz (1964) asserted that extra-role behaviours are imperative to ensure organisational productivity. Organ (1988, p.4) provided a formal definition of OCB where he defined OCB as “individual behaviour that is discretionary, not directly or explicitly recognised by the formal reward system and that in the aggregate, promotes the effective functioning of the organisation”. Extrapolating from this

definition, OCB is extra-role behaviours that are not linked to an organisation's formal reward system but contribute to organisational efficiency.

Despite growing research on OCB, the multidimensional nature of this construct is a matter of contention (Podsakoff et al., 2000; Yadav & Punia, 2013). For instance, some proponents identified two dimensions (e.g., Smith et al., 1983; Williams & Anderson, 1991), while others have identified more than one dimension of OCB (e.g., Van Dyne et al., 1994). However, the most prevalent model of OCB is Organ's (1988) five dimensions: altruism, courtesy, conscientiousness, civic virtue, and sportsmanship. Altruism is helping behaviours that benefit the individuals, such as assisting a co-worker (Dash & Pradhan, 2014).

Courtesy refers to behaviours that are aimed at preventing problems and work-related conflict, such as notifying colleagues of any necessary changes in a schedule (Srivastava & Gope, 2015; Yadav & Punia, 2013). Conscientiousness is indicated by the acts of going the extra mile and going beyond the minimum required level (Yadav & Punia, 2013). Civic virtue refers to being fully involved in the organisation's activities, such as attending meetings and reading emails (Srivastava & Gope, 2015). Sportsmanship is indicated by the ability to tolerate minor frustrations and irritations without complaints, which involves maintaining a positive attitude and sacrificing personal interest for the benefit of teamwork (Dash & Pradhan, 2014; Podsakoff et al., 2000). A literature review demonstrates that OCB results in positive outcomes such as organisational commitment, job satisfaction and performance (Yadav & Punia, 2013).

One commonly used tool to measure Organ's (1988) five dimensions is the OCB-scale developed by Podsakoff et al. (1990). Podsakoff and his colleagues underwent different stages to develop the OCB scale using a predominantly male and US-based sample. In the first stage, items were generated based on scale conceptualisations. During the second stage, ten

colleagues were used to sort out the items according to their most appropriate OCB category. The scale only includes items that were most agreed upon (Podsakoff et al., 1990). Results confirmed 24 items, with 5 items per category, except for the courtesy subscale, which was demonstrated to have 4 items (Podsakoff et al., 1990). The CFA results supported a five-factor model as suggested by Organ (1988), with all items loading to their respective dimensions (Podsakoff et al., 1990).

Moreover, Podsakoff et al.'s (1990) OCB scale has been used in several countries such as Iran, India, Israel and South Africa (Cohen & Avrahami, 2006; Khalili, 2017; Mahembe & Engelbrecht, 2014; Singh & Singh, 2009). Generally, the scale demonstrates good reliability, as indicated by Cronbach's alphas ranging from .70 to .85 (Podsakoff et al., 1990). However, there seems to be a lack of research investigating the factor structure of this scale. There are several reasons why there is a need to confirm the factor structure of the OCB-S. Firstly, OCB is elusive and can be interpreted differently in different contexts. One of the challenges of OCB lies in comprehending how it is defined and experienced in different organisational contexts (Farris, 2018).

Secondly, this scale was developed in a western country. Research on OCB in non-western countries is sparse. To the researchers' knowledge, only one study (i.e., Mahembe & Engelbrecht, 2014) investigated the factor structure of this scale using South African teachers as a sample. Results of this particular study confirmed five factors, and the model fitted data well (Mahembe & Engelbrecht, 2014). Other studies conducted in different contexts demonstrate inconsistent results. For instance, a study by Argentero et al. (2008) evaluated the factor structure of the OCB-S using the Italian sample. Results indicated that only three factors (i.e., altruism, conscientiousness and civic virtue) fitted the data well. However, only the civic virtue factor was clearly defined, with all items loading to the dimension as expected. In

contrast, the altruism factor included all the items as defined by the original scale plus one item from the courtesy dimension. The conscientiousness factor included all the items as expected, including one item from the sportsmanship factor (Argentero et al., 2008).

Similarly, Kumar and Shah (2015) investigated the factor structure of the OCB scale using an Indian sample. Findings revealed that three factors best fitted the data. The first factor included the altruism and courtesy items and was termed the 'helping factor'; the second factor included civic virtue items, and the third factor included the conscientiousness factor (Kumar & Shah, 2015). These inconsistent results indicate a need to further explore this instrument in different contexts. Finally, this study used a version of Podsakoff et al. (1990) OCB-S but only included 15 instead of 24 items. Therefore, this investigation aimed to explore the factor structure of the OCB scale and examine its appropriateness in the sample of South African preservice teachers.

#### **7.4.1. Method for analysing OCB-scale**

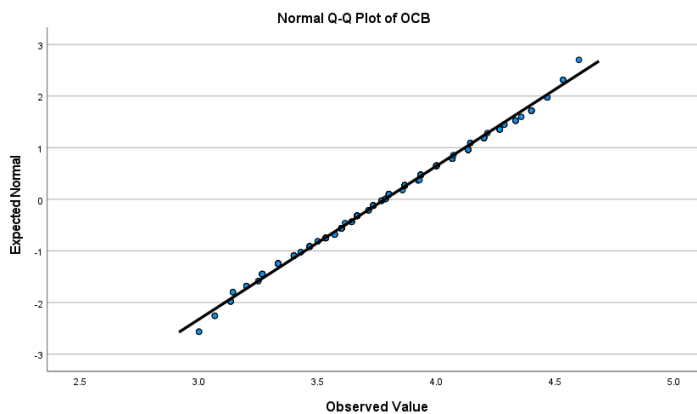
Following Argentero et al. (2008) and Kumar and Shah (2015), the OCB-S was analysed in two stages, i.e. stage one: exploratory factor analysis (EFA) was used to analyse the factor structure of the OCB-scale, and in stage 2: the EFA-derived structure was tested using confirmatory factor analysis (CFA).

The SPSS version 27 was used to conduct descriptive statistics and inferential statistics (i.e., EFA). Three items (i.e., Item1, Item9, Item11) were reverse-scored, and the mean scores were computed. Outliers were detected using a boxplot, and the Normal Q-Q plot (see Figure 7.5. below) indicated that data follows a normal distribution. Research demonstrates a lack of studies exploring the factor structure of the OCB-S. Consequently, this investigation used the

EFA to determine the latent structure of this measure (Field, 2013). The model observed on the EFA was confirmed via CFA using Amos 26.

**Figure 7.5**

*Normal Q-Q Plot of OCB-S*



*\*Note: OCB-S = Organisational Citizenship Behaviour Scale*

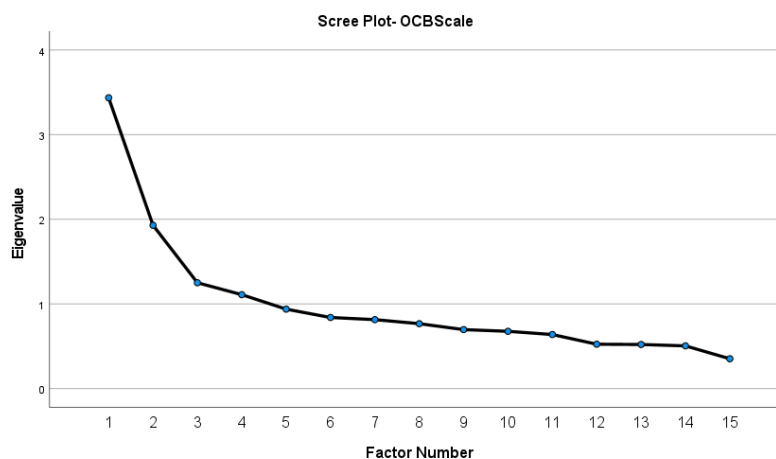
#### **7.4.2. Stage one: EFA results**

Principal Axis Factoring (PAF) using the Direct Oblimin rotation was employed. The main purpose of this investigation was to examine the underlying dimensions of the OCB-S. Thus, PAF is the most appropriate tool to use as it estimates underlying factors (Field, 2009; Taherdoost et al., 2014). To this effect, the researcher argues that OCB is explained by underlying sub-factors that are interrelated. Direct Oblimin rotation was chosen on the basis that it allows for the factors to be correlated (Pallant, 2007). Fifteen items of the OCB scale were subjected to the EFA. The suitability of data for factor analysis was assessed by the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity values.

The KMO examines sampling adequacy or the relationship of items in the correlation matrix (Taherdoost et al., 2014). Values greater than .5 are acceptable and indicate the factorability of data (Field, 2013; Kaiser, 1974). Bartlett's Test of Sphericity assesses whether the correlation matrix is different from an identity matrix (Field, 2013). A significant p. value suggests that the correlations are significantly different from zero (Field, 2013; Taherdoost et al., 2014). In the present investigation, the KMO was .66, whilst the Test of Sphericity reached the statistical significance  $p < .000$ , which indicates the suitability of data for EFA. The point of inflexion from Cattell's (1966) scree plot (see Figure 7.6. below) revealed three factors to be retained for rotation (Field, 2013). This is a mostly used and suitable retention method for samples greater than 200 (Field, 2013; Stevens, 2002, Tanderhoost et al., 2014).

**Figure 7.6.**

*Scree-Plot of the OCBScale*



*\*Note: OCBScale= Organisational Citizenship Behaviour Scale*

Guided by Argentero et al. (2008) and Kumar and Shah (2015), who found a 3-factor structure of the OCB scale, some items were excluded to maintain the internal consistency of this measure. Initially, the EFA revealed 10 items with 4 items loading to factor one (3 items for civic virtue, with 1 item for altruism); 3 items loading to factor two (all items for sportsmanship); and 4 items loading to factor 3 (2 items for conscientiousness, with 1 factor for altruism). The two items for altruism on both factor 1 and factor 3 were removed. EFA was rerun on the 8 items, and the Oblimin rotation presented three clear factors (see Table 7.5. below), namely Civic Virtue (factor 1); Sportsmanship (factor 2) and Conscientiousness (Factor 3). All items loaded to their respective factors and item loadings were all above .4. The three-factor structure solution explained 61.47% of the variance, with factor 1 contributing 28.00%, factor 2 contributing 19.47% and factor 3 contributing 14.01%.

**Table 7.5**

*Pattern Matrix of the OCB items; KMO = .66, Bartlett's test of sphericity = 303.73,  $p < .000$*

Factors	Items	Factor 1	Factor 2	Factor 3	Cronbach's alpha
<b>Civic Virtue</b>					.65
	CV1	.44			
	CV2	.68			
	CV3	.70			
<b>Sportsmanship</b>					.62
	SM1		.47		
	SM2		.74		
	SM3		.59		
<b>Conscientiousness</b>					.41
	CONSC.2			.54	
	CONSC.3			.46	

*\*Note: CV1-CV3= Civic Virtue items; SM1-SM3= Sportsmanship items; CONSC2-CONSC.3= Conscientiousness items; KMO = Kaiser-Myer-Olkin Test for Sampling Adequacy*



The Cronbach's alpha for the civic virtue factor was  $a = .65$ ; for the sportsmanship factor,  $a = .62$  and lastly, for the conscientiousness factor,  $a = .41$ . The civic virtue subscale had an acceptable internal consistency, the alpha value for sportsmanship was slightly questionable, whereas the alpha value for the conscientiousness factor was poor according to the rules of thumb (George & Mallery, 2003). However, as previously stated, low alpha values are affected by the number of items (Cortina, 1993, as cited in Samuels, 2015). This three-factor (i.e. civic virtue, sportsmanship and conscientious) OCB model was specified in the CFA.

#### 7.4.3. Stage Two: Testing the Three-Factor Structure of the OCB using the CFA

The three-factor structure of the OCB model was examined. Table 7.6 and Figure 7.7. below illustrates the parameter estimates of the three-factor OCB model.

**Table 7.6**

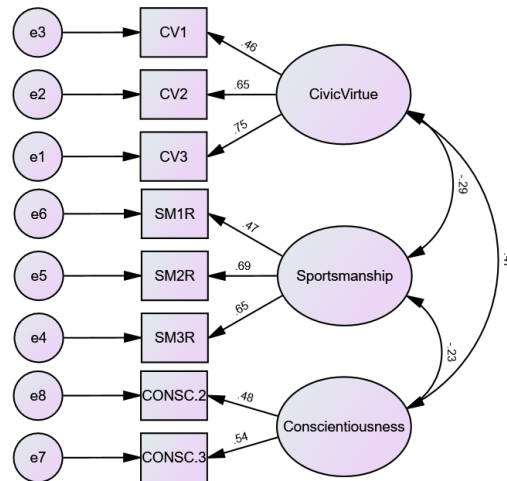
*Standardised parameter estimates of the Three-factor OCB model*

Dimensions	Three-Factor OCB model Standardised Factor; p-value
<b>CV</b>	
CV1	.462; <.000
CV2	.654; <.000
CV3	.747; <.000
<b>Sportsmanship</b>	
SM1R	.466; <.000
SM2R	.690; <.000
SM3R	.646; <.000
<b>Conscientiousness</b>	
CONSC.2	.479; <.000
CONSC.3	.747; <.000

*\*Note: CV= Civic Virtue; CV1-CV3= Civic Virtue items; SM1-SM3= Sportsmanship items; CONSC2-CONSC.3= Conscientiousness items*

**Figure 7.7**

*Three-Factor Model of the OCB-S*



*\*Note: CV= Civic Virtue; CV1-CV3= Civic Virtue items; SM1R-SM3R= Sportsmanship items= R=reverse scored; CONSC2-CONSC.3= Conscientiousness items*

The model fit indices presented below indicated that this model provided a poor fit to the data, with,  $\chi^2 (18) = 50.669, p = .000, CFI = .89, TLI = .78$  and  $RMSEA = .08$ . However, the factor loadings were satisfactory, as specified by Hair et al. (2014) and were all significant at  $p < .001$ . A decision was made to remove the conscientiousness subscale due to low factor loadings, and a two-factor OCB model consisting of civic virtue and sportsmanship was estimated.

Table 7.7. and Figure 7.8. below illustrates the parameter estimates of the two-factor OCB model.

**Table 7.7**

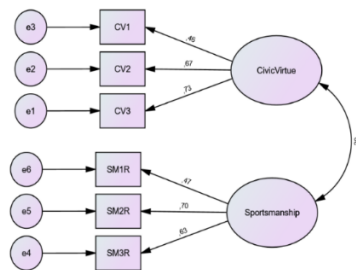
*Standardised parameter estimates of the two-factor OCB model*

Dimensions	Two-Factor OCB model
	Standardised Factor; p-value
<b>CV</b>	
CV1	.464; <.0001
CV2	.671; <.0001
CV3	.729; <.0001
<b>Sportsmanship</b>	
SM1R	.474; <.0001
SM2R	.698; <.0001
SM3R	.632; <.0001

*\*Note: CV= Civic Virtue; CV1-CV3= Civic Virtue items; SM1R-SM3R= Sportsmanship items= R=reverse scored*

**Figure 7.8**

*Two-Factor Model of the OCB-S*



*\*Note: CV= Civic Virtue; CV1-CV3= Civic Virtue items; SM1R-SM3R= Sportsmanship items= R=reverse scored*

Based on the assessment fit criteria below (see Table 7.8), the results indicated that the two-factor model provided perfect fit to the data, with  $\chi^2(8) = 10.087, p = .259, CFI = .99, TLI = .98$  and  $RMSEA = .03$ . The factor loadings met the minimum level specified by Hair et al. (2014), ranged from .47 to .73, and were all significant at  $p < .001$ . The correlation between factors was moderate. Overall, these findings suggest that OCB is best presented by two factors, i.e., civic virtue and sportsmanship. Thus, the two-factor structure will be included in subsequent analyses.

**Table 7.8**

*Goodness of Fit Indices for the OCB two-factor model*

<b>Indices</b>	OCB two-factor model
$\chi^2$	10.087
Degrees of Freedom	8
p	.259
<b>RMSEA</b>	.029
90% CL	.000-.077
pclose	.707
CFI	.991
TLI	.976

*\*Note:  $\chi^2$  = chi-square; df = degrees of freedom; TLI = Tucker Lewis Index; CFI = comparative fit index, and values greater than .90 indicate a good model fit; RMSEA = root mean square error of approximation, and values smaller than .08 indicate a reasonable fit*

#### **7.4.4. Discussion on the Factor Structure of the OCB-S**

The purpose of this investigation was to examine the psychometric properties of Podsakoff et al.'s (1990) OCB scale. The EFA findings indicated a three-factor structure which included civic virtue, sportsmanship and conscientiousness. However, this structure provided

a poor fit for the data. This model was modified, and a two-factor model of OCB, consisting of civic virtue and sportsmanship, proved to be appropriate. These findings are inconsistent with existing literature. For instance, Argentero et al. (2008) confirmed a three-factor structure of the OCB scale using the Italian sample. Interestingly, the results of this study are contrary to those found by Mahembe and Engelbretch (2014), who confirmed the five-factor model of the OCB on South African teachers. These inconsistent findings may be due to different sample characteristics.

This study consists of preservice teachers who may still be constructing their teacher identities (Dassa & Derose, 2017). The strong ability to maintain a positive attitude (i.e., sportsmanship) and a tendency to be fully involved (i.e., civic virtue) may stem from preservice teachers' involvement in education and practice. These early-career teachers construct and reconstruct their teacher identities, shaping their overall attitude in the teaching practice (Yuan & Lee, 2016). This means that due to their unique experiences, preservice teachers may interpret and understand this concept differently.

The following section presents the reliability analysis of the Utrecht Work Engagement Scale (UWES-3).

### **7.5. Evaluating the reliability of the ultrashort Utrecht Work Engagement Scale (UWES-3)**

The construct of work engagement is considered a positive construct that falls within the banner of the positive psychology movement (Bakker et al., 2008). It is conceptualised as a “positive, fulfilling, affective-motivational state of work-related well-being that can be seen as the antipode of job burnout” (Leiter & Bakker, 2010, p.1). Thus, work engagement can be

understood as consisting of emotional, cognitive and behavioural aspects. Engaged individuals are said to be highly involved, energetic and put a lot of effort into their work than burnt-out individuals who mostly experience low energy levels (Bakker & Schaufeli, 2014; Schaufeli et al., 2006).

Schaufeli and Bakker (2004) argue that work engagement is characterised by three components: vigour, dedication, and absorption. Vigour refers to high levels of energy and one's ability to be resilient and persist even in difficult times; dedication refers to the emotional aspect of engagement where individuals experience a sense of enthusiasm, pride and expend more effort in their work; absorption is a cognitive aspect characterised by being fully and happily immersed in one's work (Bakker & Schaufeli, 2014). A significant amount of research has been conducted to explore the significance of this concept, especially in the business context.

Existing research indicates that work engagement has been associated with many positive outcomes, such as organisational commitment, health and well-being and job performance (Halbesleben, 2010; Schaufeli, 2012). In the educational context, research posits that work engagement predicts teacher job satisfaction, self-efficacy beliefs and positive learning outcomes (Burić, & Macuka, 2018; Mérida-López et al., 2019; Skaalvik & Skaalvik, 2019). Taken together, work engagement is an essential resource that has positive consequences for individuals.

The Utrecht Work Engagement Scale (UWES) is the most widely used and preferred work engagement measure (Matthews et al., 2020). This scale measures three dimensions of work engagement as defined by Schaufeli and Bakker (2004), i.e., vigour, dedication, and absorption. Currently, the UWES has been translated into almost 30 languages and has been

employed and validated in many countries such as China, Finland, Turkey, South Africa, Sweden, Spain, Netherlands, Portugal, and Greece (Çapri et al., 2017; Lazauskaitė-Zabielskė et al., 2019). The UWES, developed by Schaufeli et al. (2002), originally had 17-items, with six items for both the vigour and the absorption subscale and five items for the dedication subscale. This scale was further refined, and a short 9-item measure with three items per subscale was developed by Schaufeli and Bakker (2004).

Both the 17-item and the 9-item UWES have very good internal consistencies, with Cronbach's alphas exceeding the accepted value of .70 (Matthews et al., 2020; Schaufeli et al., 2006; Willmer et al., 2019). In addition, these scales have also been adapted to the school context, where the items were tailored for the student population (Schaufeli et al., 2002). Existing research demonstrates good reliabilities for these forms (Loscalzo & Giannini, 2019; Mills et al., 2012). Nevertheless, the present study used a recently published ultra-short version of the UWES. The ultra-short UWES consists of only three items representing the three dimensions of work engagement (Schaufeli et al., 2017).

To ensure the reliability of this scale, the three indicators of the UWES-3 were selected on face validity and was validated using a wider range of population, i.e., samples from Finland, Japan, Netherlands, Belgium and Spain (Gusy et al., 2019; Schaufeli et al., 2017). According to Schaufeli et al. (2017), the UWES-3 is the preferred alternative for longer versions that can be employed to prevent participant fatigue. When participants perceive the questionnaire as too long, they may get bored and may provide less thoughtful answers (O'Reilley-Shah, 2017). This was an essential factor to consider, especially in this study which employed repeated measures.

Currently, a bulk of literature exists on the psychometric properties of the UWES-17 and UWES-9. However, there seems to be a lack of research investigating the ultrashort version of the UWES. A few existing studies have demonstrated good reliability values of this shorter scale. Schaufeli et al. (2017) revealed sufficient Cronbach's alphas for the UWES-3 across five samples i.e., Spain ( $\alpha = .77$ ); Finland ( $\alpha = .80$ ); Netherlands ( $\alpha = .82$ ); Japan ( $\alpha = .85$ ); Belgium ( $\alpha = .85$ ). Similarly, Choi et al. (2020) reported accepted Cronbach's alphas of .78 when they validated this scale using the Korean sample. Interestingly, Heyns et al. (2021) demonstrated a satisfactory internal consistency ( $\alpha = .67$ ) in a South African sample. This apparent lower reliability value compared to those reported in other studies suggests a need to further investigate the psychometric properties of this scale in the South African context.

Therefore, the aim of this investigation is to explore the reliability of the UWES-3 using South African preservice teachers. This enquiry aims to contribute to knowledge by uncovering the appropriateness of this scale in the South African context. Findings will also determine if this tool is a better alternative to longer versions.

### **7.5.1. Method for analysing the UWES-3**

Following the logic used in analysing the psychometric properties of the implicit theory measures in Section 7.3.1, Cronbach's alphas with inter-item correlations were used to analyse the psychometric properties of this scale due to a small number of items. Cronbach alpha rules of thumb are detailed in Section 7.3.1.

### **7.5.2. Results & Discussion**

Table 7.9. below presents the correlations between items and the Cronbach's alpha value of the UWES-3.



**Table 7.9***Factor loadings, inter-item correlation and Cronbach's alpha of the UWES-3*

Item	Item 1	Item 2	Item 3	<i>a</i>
When I study, I feel like I am bursting with energy	-	0.2	.25	
I am enthusiastic about my studies	.21	-	.41	
I am immersed in my studies	.25	.41	-	
UWES-3				<b>.55</b>

*\*Note: UWES-3= Utrecht Work Engagement Scale; a= Cronbach's alpha*

The reliability analysis revealed that the items were positively correlated. Inter-item correlations were acceptable, ranging from .2 to .4, indicating that they represent the same construct (Briggs & Cheek, 1986). Overall, the Cronbach's alpha for the UWES-3 was questionable with  $a = .55$ . Nevertheless, this can be due to a small number of items (Cortina, 1993, as cited in Samuels, 2015). The findings of this investigation are inconsistent with the reliability values found in other studies. For example, in Schaufeli's et al. (2017) study, Cronbach's alpha values were above .70. On the same note, Choi et al. (2020) revealed Cronbach's alpha of .78 using the Korean sample. These results are also slightly lower than the values found by Heyns et al. (2021) using the South African sample. Heyns et al. (2021) reported internal consistency of .67.

The lower Cronbach's alpha value of the UWES-3 found in this study suggests that further research is needed to investigate the reliability of this scale with other samples, particularly in South Africa. Further research should also test and compare the validity of other

UWES versions. Research demonstrates that the 17-item and the 9-item version of the UWES are reliable, with internal consistencies exceeding .70 (Matthews et al.,2020; Schaufeli et al., 2006; Willmer et al.,2019). Therefore, further studies should test and statistically compare these alternative models.

Given that the number of items may affect the lower Cronbach's alpha revealed in this study, and based on previous research, which has shown good reliabilities for the UWES-3, this measure was used in subsequent analyses.

## **7.6. Overall Discussion and Further Research**

In this study, the psychometric properties of six instruments (i.e., WLEIS, ITI-S, ITP-S, ITE-S, OCB-S and the UWES) were investigated. This is an essential inquiry given a dearth of empirical studies investigating the reliability and validity of these scales in the South African context. Validating measures in different cultures ensures that the questionnaire measures what it intends to measure across cultures (Drost, 2011). Consequently, this investigation sought to uncover the appropriateness of these scales in a sample of South African preservice teachers.

The study commenced with the WLEIS. Following past research, two models were specified in the CFA, i.e., the four-factor model, which assumes that EI is indicated by four separate dimensions, and the second-order model, which denotes that EI is a global factor that can be indicated by four dimensions. The CFA results revealed that both these models indicated a good fit for the data. However, the second-order model was shown to be more parsimonious than the four-factor model. These findings are inconsistent with previous studies. For instance, Di et al. (2020) found that the four-factor model is more parsimonious. Therefore, more empirical studies are needed to investigate these alternative models further. Nonetheless,

consistent with previous studies (e.g. Wang & Kong, 2014; Wong & Law, 2002), this measure reported high internal consistencies, which suggests that it is reliable for the South African preservice teachers population.

Although the CFA is a robust measure of scale validity, the goodness of fit values is impossible in scales with less than four items (Ribeiro et al., 2011). Thus, Cronbach's alphas with inter-item correlations were computed to test the reliability of the implicit theory measures. The implicit theories of intelligence and personality measures reported acceptable Cronbach's alphas and good inter-item correlations. Although Cronbach's alpha values for these instruments were acceptable, they seemed lower than the values reported in other studies (e.g. Chiu et al., 1997; Dweck et al., 1997). Most interestingly, the implicit theories of emotion scale showed poor reliability for this sample. This instrument revealed questionable inter-item correlations and an inadequate Cronbach's alpha value. These findings are inconsistent with previous research studies, which have shown adequate internal consistency for this scale (e.g., De Castella et al., 2013; De France & Hollenstein, 2021; Kappes & Schikowski, 2013; King & dela Rosa, 2019).

This study suggests that more research is needed to investigate the reliability of implicit theory measures, especially the implicit theories of emotion scale. Based on the findings, the poor internal consistency of the ITE scale may be due to technical item wording effects. This scale consists of four items (i.e. two measuring a growth mindset and two measuring a fixed mindset). Research demonstrates that the inclusion of negative and positive statements largely affects the reliability of the scale (Chyung et al., 2018). Consequently, future research studies could extend this inquiry by exploring the effects of combining a growth mindset and fixed mindset items in this scale.

Furthermore, this study did not confirm the five dimensions OCB measure specified by Podsakoff et al. (1990). Instead, a two OCB model consisting of civic virtue and sportsmanship showed a good fit for the data. It is noteworthy to mention that existing literature reveals inconsistent structures for this scale. For example, Argentero et al. (2008) confirmed a three-factor structure using the Italian sample. More interestingly, Mahembe and Engelbretch (2014) demonstrated a five-factor model of the OCB scale using South African teachers as a sample. These inconsistent findings indicate that future research must further investigate the measurement invariance of this scale. In addition, the results of this study revealed a questionable Cronbach's alpha value for the UWES-3. It can be argued that this is due to a few items (Cortina, 1993, as cited in Samuels, 2015).

Nevertheless, some studies in other countries have shown adequate internal consistencies of this scale (Choi et al., 2020; Schaufeli et al., 2017). To this effect, more research is needed to further investigate the reliability of the UWES-3, especially in South Africa. Future studies could also compare existing Utrecht Work Engagement scales to explore the most reliable and parsimonious solution.

## **7.7. Chapter Summary**

This chapter presented the findings of Study 2, which investigated the psychometric properties of the six instruments (i.e., WLEIS, three Implicit Theory measures, the OCB scale and the UWES). The findings of this study inform subsequent studies. Confirmed factors and scales will be used in Study 3 (i.e., Chapter 8) and Study 4 (i.e., Chapter 9). The findings of this study showed that the WLEIS is a reliable measure for the South African preservice teachers. Both the four-factor and the second-order EI models showed a good fit for the data.

The implicit theories of intelligence and personality measures revealed adequate internal consistencies as demonstrated by Cronbach's alpha values. However, the implicit theories of emotion scale showed poor internal consistency. Furthermore, the results did not confirm the five-factor model. Instead, a two-factor OCB model consisting of civic virtue and sportsmanship demonstrated a good fit for data. Lastly, findings showed that the UWES has questionable internal consistency. Notwithstanding the poor psychometric properties of the implicit theories of emotion scale and the UWES, these scales will be employed in subsequent studies.

The next chapter deals with Study 3, which investigates the impact and process evaluation of a brief intervention.

## **CHAPTER 8: STUDY 3- THE IMPACT AND PROCESS EVALUATION OF A BRIEF GROWTH MINDSET & EMOTIONAL INTELLIGENCE INTERVENTION**

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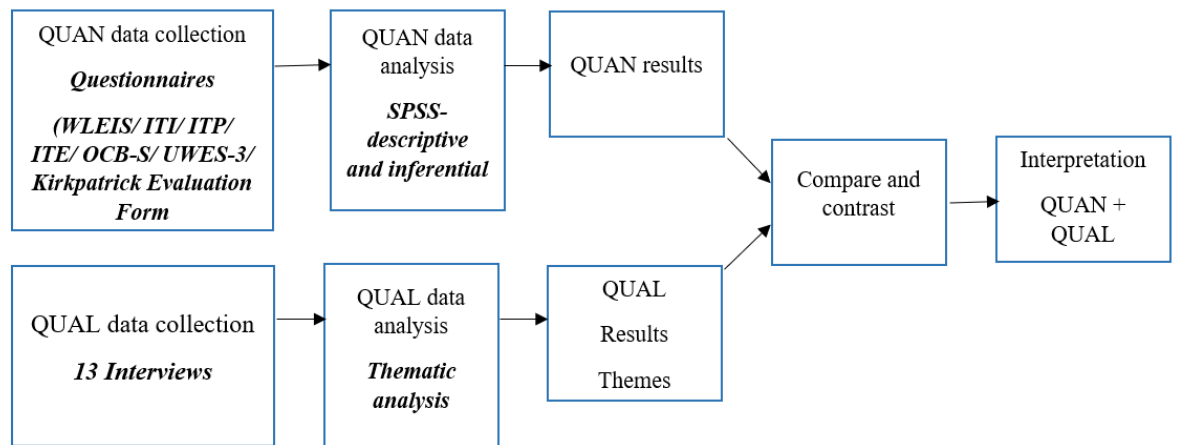
### **8.1. Study Overview**

In this study, the researcher investigates the effects of an intervention on preservice teachers' (PSTs) emotional intelligence (EI), mindsets, organisational citizenship behaviour (OCB) and work engagement. To ascertain the impact of this investigation, processes and contextual variables that affected the implementation were also considered. Process evaluation provides valuable insights into the intervention outputs by deciphering the factors that contribute to interventions' successful or unsuccessful execution.

Multiple data collection methods were employed to achieve the goals of this study. Quasi-experimental non-equivalent groups interrupted time-series design detailed in Chapter 4 was used to test the quantitative effects of an intervention. The Kirkpatrick evaluation form and semi-structured interviews complemented the quasi-experimental design and enriched our understanding of the processes that influenced intervention implementation. As mentioned in Chapter 4, this research study adopted a convergence triangulation mixed methods approach. In this approach, quantitative and qualitative data are collected and analysed separately, and findings are integrated and interpreted in conjunction (Creswell & Plano Clark, 2007). Figure 8.1. below depicts the convergence triangulation model.

**Figure 8.1**

*Triangulation design: convergence model adapted from (adapted from Creswell & Plano Clark, 2007)*



The following research questions guided this investigation:

1. How does participation in a brief GMEI intervention affect preservice teachers' emotional intelligence, mindsets, organisational citizenship behaviour, and engagement compared to a comparison group? (i.e., *Research question three of the thesis*)
2. What are preservice teachers' perceptions of the GMEI? (i.e., *Research question four of the thesis*)
3. What are the barriers to implementing the GMEI in education contexts? (i.e., *Research question five of the thesis*).

This chapter is structured as follows. Section 8.2. provides a brief background of the present study. Section 8.3. describes the methodology followed in this study, including the characteristics of the study sample, data collection procedures and measures employed. Section 8.4. details data analysis strategies and techniques. Section 8.5. presents the findings of the

study. The quasi-experimental intervention study findings will be presented first, followed by the intervention evaluation results. In Section 8.6., findings of both the quasi-experimental intervention and process evaluation will be integrated and discussed. Section 8.7. presents the chapter summary.

## **8.2. Study Background**

Subject knowledge is inadequate in the construction of sound pedagogical philosophy. As ‘leaders’, teachers are expected to not only impart knowledge but are also required to exhibit empathetic capabilities when interacting with learners, colleagues, and parents (Hargreaves, 2001). Indisputably, this emotional nature of the teaching profession is likely to exacerbate negative outcomes (Corcoran & Tormey, 2012). Research evidence reveals that high emotional demands coupled with job demands such as heavy workload and time pressure culminate in stress, burnout and depression (Baka, 2015; Beltman & Poulton, 2019; De Simpone & Lampis, 2016; Schmid & Thomas, 2020; Skaalvik & Skaalvik, 2018; Tuxford & Bradley, 2014). Other empirical studies demonstrate a link between these demands and higher early-career teacher attrition (Clandinin et al., 2015; den Brok et al., 2017; Harmsen et al., 2018). This suggests a need for positive interventions mainly targeting PSTs. PSTs are more susceptible to a dire state of well-being due to these emotional pressures and academic demands (Klassen et al., 2013; Ngui & Lay, 2018).

EI is one essential psychological concept that could be useful for PSTs (Vesely et al., 2013). As mentioned in Chapter 1, EI emerged from Thorndike’s (1920, p.4) concept of social intelligence, which was conceptualised as “the ability to manage and understand men and women, boys and girls, and act wisely in human relations”. Thus, EI can be understood as the



ability to process emotions and effectively use them to solve problems (Salovey & Mayer, 1990). A review of literature presents different EI models that include the ability EI model, trait EI, and mixed models (Ackley, 2016; Joseph & Newman, 2010; Mayer et al., 2008; Petrides, Furnham & Mavroveli, 2007). The ability and the trait EI are positioned as competing models due to their different conceptualisations and distinct domains. The trait EI approach conceptualises EI as part of the personality domain, whereas the ability EI understands EI as a mental ability inherent to the intelligence hierarchies (Mayer et al., 2016; Petrides et al., 2007). Both models possess some merits and demerits detailed in Chapter 1. This study was grounded on the ability EI model as it has been considered the most theoretically robust (Antonakis et al., 2009; Cherniss, 2010; Joseph & Newman, 2010).

The ability EI model consists of four dimensions, i.e. a) Perceiving emotions (i.e. the ability to identify and express emotions accurately), b) Facilitating thought using emotion (i.e. the ability to effectively use emotions to solve problems, make decisions and achieve personal goals), c) Understanding emotions (i.e. the ability to understand emotions and their causes and consequences) and d) Managing emotions (i.e. the ability to manage one's and others' emotions effectively) (Mayer et al., 2016; Schneider et al., 2013). Research demonstrates that EI predicts positive educational outcomes (Vesely et al., 2013). Teachers high in EI are said to be more attentive to students' needs and tend to focus more on constructive engagement during emotionally charged situations (Brackett & Katulak, 2006; Nizielski et al., 2012; Ramana, 2013). To this effect, EI contributes to prosocial behaviour conducive to the teaching and learning environment (Hen & Sharabi-Nov, 2014; Mortiboys, 2013). Furthermore, EI has been associated with positive outcomes such as job satisfaction, commitment and teacher effectiveness (Anari, 2012; Myint & Aung, 2016). Indeed, EI-enhancing interventions are

necessary to promote positive behaviour and create favourable learning conditions (Hen & Sharabi-Nov, 2014).

In addition to emotional states, teachers' beliefs also affect attitudes and pedagogical practice. Experienced teachers and PSTs espouse certain beliefs about themselves, others and their professional practice (Devine et al., 2013). In the quest for understanding the impact of internal beliefs, Carol Dweck's (1986) concept of mindsets has gained momentum within the psychology and education community. Mindsets or implicit theories are beliefs that people hold about their attributes (e.g., intelligence, personality, emotion etc.) (Dweck & Master, 2008; Dweck & Yeager, 2019). These beliefs influence cognition and behaviour (Dweck & Yeager, 2019). In her model, Dweck (1986) distinguishes between a fixed mindset or entity theory (i.e., a belief that human attributes are fixed and cannot be developed) and a growth mindset or incremental theory (i.e., a belief that human attributes can be developed and improved through effort and persistence).

A fixed mindset has been associated with adverse outcomes such as stress and depression, whereas a growth mindset has been associated with positive outcomes such as well-being (Yeager et al., 2013; Yeager & Dweck, 2012). Nevertheless, research on mindsets has been focused on learners. Few studies on teacher mindsets demonstrate that these beliefs affect teachers' well-being, instructional behaviour and students' academic achievement (Jones et al., 2012; Tao et al., 2021). This signals a need to investigate teachers' implicit theories to foster positive behaviour in educational settings. Research on implicit theories reveals that mindsets are domain-specific, meaning that individuals can hold different mindsets about different personal characteristics (Dweck, 2017). This study focuses on the implicit theories of intelligence (i.e., beliefs about the nature of intelligence); implicit theories of personality (i.e.,

beliefs about the nature of personality traits); and implicit theories of emotion (i.e., assumptions about the nature of emotions) (Chiu et al., 1997; Dweck & Molden, 2000; Tamir et al., 2007).

Although EI and mindsets contribute to positive outcomes in the education field, there seems to be a lack of studies linking these concepts. One study by Cabello and Fernández-Berrocal (2015) revealed a positive association between implicit theories of emotion and EI. It was suggested that growth mindsets be incorporated in EI training programmes for more favourable outcomes (Cabello and Fernández-Berrocal, 2015). There is conclusive evidence that EI abilities can be enhanced and that a growth mindset can be taught through training (Blackwell et al., 2007; Clarke, 2010; Groves et al., 2008; Nelis et al., 2009; Yeager et al., 2013). In fact, socio-emotional learning (SELs) programmes aimed to equip learners with emotion management skills in the education field are prominent (Durlak, 2015; Weissberg et al., 2015). Research, however, demonstrates scant EI intervention studies targeting teachers and PSTs (Hen & Sharabi-Nov, 2014). Few existing EI intervention studies with educators as samples have produced promising findings. For example, Hen and Sharabi-Nov's (2014) study found that the EI intervention enhanced teachers' EI abilities and empathy.

Moreover, a review of the literature on EI intervention studies in education (see Chapter 3) has uncovered rather intriguing findings. Whilst other studies have reported a successful improvement of all EI abilities post-intervention, some studies reveal that EI interventions can enhance only certain abilities. Nelis et al.'s (2009) EI intervention study indicated a significant increase in all EI dimensions, except the understanding of emotion EI component. On the same note, Pool and Qualter's (2012) study found a significant difference in only two dimensions of EI (i.e. understanding and managing emotions EI dimensions). Several conclusions can be drawn from these results. The most central one is the amenableness of some EI abilities relative to others. Nevertheless, it should be noted that both Nelis et al. (2009) and Pool and Qualter's

(2012) research employed controversial EI measures (e.g., Mayer-Salovey-Caruso Emotional Intelligence Test and the Situational Test of Emotional Understanding) with questionable internal consistencies. Undeniably, valid operationalisation of research instruments is essential in EI intervention research (Conte, 2005).

The duration of the intervention can also explain the lack of improvement in other EI abilities. For example, a study by Nelis et al. (2009) included an EI intervention consisting of four sessions (2 and a half hours each). A review of the literature indicates that the content and implementation of the intervention can significantly affect the outcomes (Steckler & Linnan, 2002). Participants must be fully engaged during the implementation of the training programme to ensure its rich effectiveness (Saunders et al., 2005). Perhaps the content in Nelis et al.'s (2009) intervention was not adequate enough to spark full participant engagement and influence all EI abilities. It is suggested that including Carol Dweck's theory of mindsets in brief EI interventions may enhance the effectiveness of these interventions. Understanding that human attributes such as intelligence and emotions are malleable is likely to influence an individual's openness to use effective emotion management strategies.

To this effect, this study proposes an integrated intervention consisting of mindsets and EI psychological theories. As positive constructs, it is expected that this intervention will also influence positive behaviours and attitudes such as organisational citizenship behaviour and work engagement. OCB is understood as a multifaceted construct consisting of five dimensions, i.e., altruism, conscientiousness, courtesy, civic virtue and sportsmanship. For a detailed conceptualisation of this concept, see Chapter 2. Based on Study 2's findings (i.e. psychometric properties), this study focuses on only two dimensions of OCB, i.e. sportsmanship (i.e. willingness to tolerate all work inconveniences without complaining) and civic virtue (i.e. employee behaviour that indicates involvement in the functions of the

organisation) (Organ, 1988; Podsakoff et al., 1990). According to Cek and Eyupoglu (2020), OCB is pivotal in educational contexts, given the dynamic nature of the teaching profession. Examples of OCB in schools include providing students with additional support and being more involved in the processes that improve the overall quality of learning (Burns & DiPoala, 2013). Indeed, such behaviours can enhance school effectiveness and positive attitudes (Somech, 2016).

Work engagement is also positioned as an instrumental concept in educational settings. For Bakker et al. (2008), work engagement is characterised by involvement, absorption, passion and strong, focused effort and energy on work. Consequently, engaged teachers are highly motivated and tend to perform effectively (Klassen et al., 2012). Furthermore, the likelihood of a growth mindset and EI-based intervention to cultivate these positive behaviours is not inconceivable, drawing from existing correlational studies.

There is a plethora of literature depicting positive associations between EI, work engagement and citizenship behaviour (De Clercq et al., 2014; D'Amico et al., 2020; Extremera et al., 2018; Mérida-López et al., 2017; Turnipseed, 2018; Yadav & Punia, 2016). A few existing studies also demonstrate a positive relationship between a growth mindset, work engagement and citizenship behaviours (Özduran & Tanova, 2017; Zeng et al., 2019). Although these studies are correlational and therefore do not imply causation, they provide essential initial evidence of the association between these variables. It would be interesting to extend this knowledge by investigating whether these behaviours can be cultivated by an intervention grounded on mindsets and EI.

In addition, it appears that previous intervention studies overlook the process elements that may explain the successes and unsuccessfulness of the intervention. The present

investigation incorporated an evaluation component that aims to unveil participants' perceptions about the implementation and content of the intervention (Nytrø et al., 2000). This intervention evaluation feature can explain the intervention's success or failure by portraying vital aspects of the intervention that acted as drivers of behavioural change as well as barriers to effective intervention implementation in a specific context (Arends et al., 2014; Hulscher et al., 2003). The notable Kirkpatrick's (2013) four-level and Neilsen & Randall's (2013) three-component intervention evaluation frameworks were used to evaluate this intervention. The features of these models are explained in Chapter 4.

Kirkpatrick's (2013) model speaks to participants' reactions and a change in their behaviour as a result of the training programme. Neilsen and Randall's (2013) model is also concerned about participants' perceptions regarding the intervention's impact in bringing about cognitive and behavioural change, which is referred to as the 'mental models'. However, this framework also includes other components, which include contextual factors such as the characteristics of participants, the time and place where the intervention is implemented, the nature of the setting surrounding participants, and the quality of intervention implementation (Nielsen & Abildgaard, 2013).

Overall, this study contributes to literature and methodology in several ways. Firstly, it links EI and mindsets theories to develop an integrated intervention. These constructs have been independently studied; however, the researcher contends that their integration may produce powerful, positive results. As previously mentioned, teaching about growth mindsets may facilitate further improvement of EI abilities (Cabello & Fernández-Berrocal, 2015). Secondly, there is a scarcity of intervention-based studies, particularly interventions based on the theoretically sound ability EI model (Clarke, 2006; Groves et al., 2009). Thirdly, this study examines the impact of an intervention based on EI and mindsets on citizenship behaviours

and work engagement. Although the significance of OCB and work engagement is apparent, how these constructs can be enhanced is still obscure. Finally, this research was carried out in South Africa. Research on EI and mindsets is mostly conducted in Western countries. Therefore, this study will uncover the applicability of these constructs in a non-western culture.

In accordance with the previous literature, the following hypotheses are proposed:

*Hypothesis 1:* The intervention group will demonstrate an increase in emotional intelligence and its subscales post-intervention compared to the comparison group.

*Hypothesis 2:* The intervention group will demonstrate a growth mindset in all implicit theories (i.e., intelligence, personality and emotions) post-intervention compared to the comparison group.

*Hypothesis 3:* The intervention group will demonstrate significantly higher scores in civic virtue and sportsmanship post-intervention compared to the comparison group.

*Hypothesis 4:* The intervention group will demonstrate an increase in work engagement scores post-intervention compared to the comparison group.

### **8.3. Methods**

#### **8.3.1. Participants**

This study comprised 168 final-year PSTs registered in two institutions of higher learning based in South Africa. An intervention group ( $n = 86$ ) consisted of participants who underwent a brief growth mindset and emotional intelligence (GMEI) training programme, and the comparison group ( $n = 82$ ) consisted of participants who did not attend the programme or who only attended the first session.

The majority of the participants were female, 118 (70.2 %), compared to 50 (29.8%) males. Most participants were in the 21-30 age group, 164 (97.6%), compared to only 2 (1.2 %) in the 20 years and younger and 31-40 age groups, respectively. In terms of the subject knowledge, 80 (47.6%) participants specialise in Maths, Science & Technology; followed by those specialising in Economics and Management Science 50 (29.8%), followed by the Social Sciences 32 (19.0%), and lastly, those specialising in Life Orientation and Language Education 5 (3.0%).

Participants who completed the evaluation form and engaged in an interview consisted of those who attended all the intervention sessions. In total, 85 completed the feedback evaluation questionnaire, and only 13 participants were interviewed. Of the 13 participants, 7 were female, whilst 6 were male.

### **8.3.2. Procedure**

Two ethical clearance permissions (see Appendix 1) were sought from the University of Nottingham, Division of Psychiatry & Applied Psychology, to conduct the main intervention study and qualitative interviews. Permission was also sought from the two universities (see Appendix 2). Participants were measured at four-time points. Participant recruitment commenced with a briefing. This is where participants were provided with essential information pertaining to the research. During the briefing, participant information sheets and consent forms were distributed (see Appendices 3 & 4). Participants who completed and returned the consent forms were given the questionnaire containing all the research instruments to complete. These questionnaires were immediately collected (Time 1- four weeks before the intervention). Participants completed the research instruments again before the intervention started (Time 2). The training programme consisted of four sessions (approximately an hour



each), running on four separate days. Data collected at Time 1 and Time 2 were set as the baseline. Participants were then asked to complete the measures immediately after the intervention (Time 3). Follow-up (Time 4) was conducted four weeks after the intervention.

The comparison group consisted of participants who did not attend the intervention or who only attended the first session. These participants only completed the questionnaires at Time 1 (pre-intervention) and Time 4 (follow-up) (i.e., only a few completed the questionnaires at Time 2). The semi-structured, telephonic interviews were conducted two months after the intervention.

### **8.3.3. The Growth Mindset & Emotional Intelligence (GMEI) Training Programme**

The intervention consisted of four sessions, approximately an hour each, running for four separate days. The first session focused on Carol Dweck's (1986) mindset theory. Participants were taught about the difference between a growth and a fixed mindset and the consequences of each. The main message in this session was that the brain changes and forms new connections through learning (Blackwell et al., 2007; Good et al., 2003; Schleider & Weisz, 2018; Yeager et al., 2013). As part of an activity, participants were asked to read an article entitled '*You can grow your intelligence*' and write a letter to their future students explaining how the brain develops and learn through challenges and effort (DeBacker et al., 2018; Yeager et al., 2016). This activity, which is called the 'self-persuasion task', is predicated on the premise that when individuals communicate a message to someone else, it can convince them to believe in the message (Yeager et al., 2016).

Moreover, the subsequent three sessions dealt with the EI component. The main objectives of these sessions were to develop participants' EI abilities as denoted in Salovey and

Mayer's (1990) EI model, i.e., *perceiving emotions, using emotions, understanding emotions and managing emotions*. Participants were provided with broad knowledge of the impact of emotions on cognition and behaviour (Izard, 2013). Consequently, the role of EI in understanding and managing emotions was emphasised.

Activities included in these EI sessions aimed to build self-awareness and capacitate participants with emotion management tools. For instance, a mood meter was used to assist participants in perceiving their emotions and understanding the causes and consequences of their emotions (Kornacki & Caruso, 2007; Tominey et al., 2017). The mood meter consists of two axes, i.e., horizontal (pleasantness) and vertical (energy levels) (Tominey et al., 2017). Participants were asked to mark the mood meter according to their experienced emotions or feelings. This encouraged them to reflect and understand the causes of their emotions.

In addition, an activity such as a mindfulness exercise was used to demonstrate adaptive emotion management strategies. Mindfulness has been defined as the 'awareness that emerges through paying attention on purpose, in the present moment, non-judgementally to the unfolding of experience moment by moment' (Kabat-Zinn, 2003, p.145). PSTs participated in a guided mindfulness activity where they were taught to be conscious of their breathing and surroundings. Empirical evidence demonstrates that this practice reduces psychological distress and leads to positive outcomes (Ghawadra et al., 2019).

#### **8.3.4. Instruments**

Six research instruments were employed. Study 2 in Chapter 7 explored the psychometric properties of these scales. This included the 16-item Wong and Law Emotional Intelligence Scale (WLEIS) which was used to measure EI. This scale was developed by Wong and Law (2002) and is based on Salovey and Mayer's (1990) four ability EI dimensions which

include, self-emotions appraisal (SEA); others-emotions appraisal (OEA); use of emotion (UOE) and regulation of emotion (ROE) (Law et al., 2004; Wong & Law, 2002). In Study 2, the WLEIS demonstrated good internal consistencies with an excellent Cronbach's alpha for the total scale  $\alpha = .81$  and Cronbach's alphas ranging from .70 to .83 for the subscales. Confirmatory factor analysis (CFA) findings also confirmed the second-order model consisting of four factors. The present study also reported good Cronbach's alphas of .80 at Time 1 (i.e., pre-intervention) and .88 at Time 4 (i.e., follow-up).

Three implicit theory measures were employed to measure three domains (i.e., intelligence, personality and emotion). The Implicit Theories of Intelligence Scale (ITI-S), which was developed by Dweck and Henderson (1998); the measure of Implicit Person Theories (ITP-S) by Chiu et al. (1997) and the Implicit Theories of Emotion Scale (ITE-S) by Tamir et al., (2007). In the previous study, both the ITI and ITP scales demonstrated good internal consistencies (i.e., .74 and .68, respectively), whereas the ITE scale presented a poor Cronbach's alpha value of .46. This study also reported good internal consistencies for ITI (i.e., Time 1,  $\alpha = .78$ ; Time 4,  $\alpha = .82$ ) and ITP (i.e., Time 1,  $\alpha = .72$ ; Time 4,  $\alpha = .81$ ). Unsatisfactory internal consistencies were reported for the ITE scale (i.e., Time 1,  $\alpha = .44$ ; Time 4,  $\alpha = .50$ ). Nevertheless, as mentioned previously, this might be due to the combination of positive and negative items, as well as the small number of items.

Furthermore, the Organisational Citizenship Behaviour Scale (OCB-S) developed by Podsakoff et al. (1990) was used to measure citizenship behaviours. The five-factor structure did not hold in Study 1. Instead, a 2-factor model consisting of civic virtue (CV) and sportsmanship (SM) was found to fit the data well. Therefore, only the civic virtue and sportsmanship subscales of this measure will be included in this study. In the previous study, satisfactory internal consistencies were found with  $\alpha = .65$  for CV and  $\alpha = .62$  for SM. Likewise,

this present investigation indicated internal reliabilities of .69 at Time 1 and .54 at Time 4 for CV, whereas SM reported internal reliabilities of .67 at Time 1 and .69 at Time 4.

The ultrashort 3-item Utrecht Work Engagement Scale (UWES-3) developed by Schaufeli et al. (2017) was used to measure work engagement. In Study 1, the UWES-3 indicated a questionable Cronbach alpha of .55, which can be attributed to a few items (Cortina, 1993, as cited in Samuels, 2015). Along a similar vein, the present study revealed internal reliabilities of .59 at Time 1 and .56 at Time 4. Furthermore, other means of data collection methods were also utilised to enrich this study. The Kirkpatrick evaluation form and the semi-structured, telephonic interviews were employed to evaluate the training programme's qualitative impact and to uncover the underlying processes that may have influenced the implementation of the intervention. The Kirkpatrick evaluation form is predicated on Donald Kirkpatrick's four-level evaluation model, i.e., reaction, learning, behaviour and results (Kirkpatrick, 2013). The present study only included the reaction level, which is concerned with participants' perceptions of the intervention, including its practical utility (Kirkpatrick & Kirkpatrick, 2016).

The reaction level comprises three components: engagement, relevance, and satisfaction (Kirkpatrick & Kirkpatrick, 2016). The engagement dimension refers to the extent to which participants are involved and actively contributing to the learning experience (Kirkpatrick & Kirkpatrick, 2016). This dimension also includes other essential training aspects, such as the abilities of the facilitator and the classroom environment. The relevance dimension refers to the practical utility of the intervention. It is the degree to which participants will utilise and apply their learning to their jobs (Kirkpatrick & Kirkpatrick, 2016). Lastly, satisfaction refers to the extent to which participants are satisfied with the overall learning event. Research posits that it is essential to capture participants' reactions and attitudes towards

the training programme (Tan & Newman, 2013). Participants' perceptions about the relevance or utility of the intervention and overall satisfaction may enhance their engagement levels, consequently boosting the high transfer of learning (Liebermann & Hoffmann, 2008).

Semi-structured, telephonic interviews were employed to understand the experiences and perceptions of participants regarding the intervention. A semi-structured interview is appropriate for this study because of its ability to elicit information from participants' perspectives (Luo & Wildemuth, 2009). In other words, semi-structured interviews involve predetermined questions, but they can allow the researcher to explore participants' experiences in detail (Wilson, 2014). Most importantly, the suitability of a semi-structured interview was determined by study goals. This interview type allowed the researcher to seek subjective views and opinions of participants based on their experiences during and after the intervention. Although face-to-face interviews are highly recommended, the use of a telephonic medium is also deemed an appropriate alternative. In fact, Cachia and Millward (2011) asserted that telephone interviews provide good quality data on par with that obtained using face-to-face interviews.

The interview questions were guided by Nielsen and Randall's (2013) intervention evaluation framework and linked to the research questions, as Castillo-Montoya (2016) suggested. Nielsen and Randall's (2013) evaluation framework includes mental models, intervention content and implementation and the intervention context. See Appendix 6 for an Interview Schedule.

#### **8.4. Data Analysis**

In accordance with a convergence triangulation model, quantitative and qualitative data were analysed separately (Creswell & Plano Clark, 2007). IBM Statistical Package for the Social Science (SPSS) v. 27 was utilised to analyse quantitative data. Preliminary analyses were conducted to prepare data for further analysis. All extreme outliers, as observed from the boxplots, were removed. Descriptive statistics were run to explore data and to check for violations of assumptions (e.g., normal distribution) (Mayers, 2013; Pallant, 2007). Reliability analysis was performed to examine the reliability of the measures. In addition, the analysis included baseline equivalence on each outcome measure (i.e., EI, implicit theories, OCB subscales and UWES) to determine the equivalence between the intervention and comparison group at the pre-test. Testing baseline equivalence of these groups is essential so that differences in the outcome measures post-intervention can be attributed to the intervention. An independent samples t-test of mean differences was conducted to test the difference in EI, implicit theories and work engagement scores between an intervention and a comparison group. To avoid inflation of a Type I error, which is likely to occur when running multiple statistical analyses, a Multivariate Analysis of Variance (MANOVA) was computed to test the difference in OCB-subcales (i.e., civic virtue and sportsmanship) between an intervention and the comparison group (Warne, 2014).

Attrition analysis was also conducted to examine the differences between the dropouts and participants who completed the intervention. Attrition decreases the study's power and threatens its validity (Barry, 2005). As such, it is vital to include this component in the analyses. A mixed multifactorial analysis of variance (mixed ANOVA) and a repeated-measures ANOVA were performed to test the impact of the intervention on EI, implicit theories, OCB-subcales (i.e., civic virtue and sportsmanship), and work engagement. A mixed ANOVA was

chosen because it allows researchers to investigate the within-group (i.e., pre-and-post intervention) and between-group (i.e., intervention and comparison) main effects, as well as the interactions between these independent variables on the dependent variables (i.e., EI, implicit theories, OCB-subscales and work engagement) (Mayers, 2013). In this study, both the intervention and the comparison group were measured in two-time points (i.e., Time 1; and Time 4). Thus, data from Time 1 (pre-intervention) and Time 4 (follow-up) was used to carry out this statistical analysis. To further investigate the source of interactions, between-group and within-group ANOVAs were carried out as suggested by Mayers (2013).

For a mixed ANOVA, assumption testing included normality, homogeneity of variance and homogeneity of inter-correlations (Pallant, 2007). Normality was tested with Normality Q-Q Plots and the Kolmogorov Smirnov statistic, where significant  $p$  values indicated that the data deviated from normality (Field, 2013; Pallant, 2007). Levene's test of homogeneity was used, and significant values greater than .05 indicated that this assumption was not violated (Field, 2013; Mayers, 2013). The homogeneity of inter-correlations was tested using the Box's  $M$  statistic, and significant values less than .001 indicate that this assumption was violated (Pallant, 2007). In addition, a repeated-measures ANOVA or within-subjects ANOVA was used to compare the dependent variable scores across two or more conditions (Mayer, 2013). In the present study, the intervention group was measured at four-time points, i.e., Time 1 (pre-intervention); Time 2 (immediately before the intervention); Time 3 (immediately after the intervention); and Time 4 (four weeks after the intervention). In this analysis, the means of the dependent variables will be compared across four conditions or time points. Thus, based on the aims of this study, this statistical method is appropriate for this design (Langenberg et al., 2020).

For repeated measures, the normality of data and Mauchly's test of sphericity were tested. Mauchly's test of sphericity examines the equality of variances of the differences between different conditions (i.e., values higher than .05 indicate that this assumption was not violated) (Field, 2013; Pallant, 2007). The Greenhouse-Geisser correction was employed if data violated the assumption of sphericity (Field, 2013). Bonferroni post hoc tests were run to further investigate the differences between conditions (Field, 2013). It is noteworthy to mention that Field (2013) and Mayers (2013) asserted that ANOVA is fairly robust to violations of normality and homogeneity of variance when sample sizes between groups are equal. In this study, the intervention group comprised 86 participants, and the comparison group comprised 82 participants. These groups are fairly equal, and therefore in some cases, ANOVA tests were carried out despite violating the assumption of normality and homogeneity of variance.

Furthermore, data from the feedback evaluation form and semi-structured interviews were analysed separately. The IBM Statistical Package (SPSS) version 20 was used to analyse data from the feedback questionnaire. Descriptive statistics were conducted to summarise the means (*M*) scores and standard deviations (*SD*) for each item in the feedback form. Scores for items relating to three dimensions (i.e., engagement; relevance; satisfaction) were averaged. Braun and Clarke's (2012) prominent Thematic Analysis method (TA) was used to analyse qualitative data. This method consists of six phases which are outlined below.

- Familiarisation with data (Braun & Clarke, 2012). All 13 audio-recorded interviews were listened to and transcribed verbatim whilst noting initial codes.
- Generating initial codes (Braun & Clarke, 2012). Interview transcripts were imported into the NVivo software. The researcher reread the transcriptions and



coded items using nodes and sub-nodes. The coding of data was guided by research questions and Nielsen and Randall's (2013) intervention evaluation framework.

- Theme development (Braun & Clarke, 2012). Codes were reviewed to identify emerging potential themes. All codes that were related to each other were clustered together.
- Reviewing potential themes (Braun & Clarke, 2012). Themes were reviewed and thoroughly scrutinised to ensure that they were fully represented.
- Refining and defining themes (Braun & Clarke, 2012). Themes were grouped under Nielsen and Randall's (2013) framework, i.e. mental models, intervention content and implementation; and intervention context.
- The sixth and final phase involves presenting themes in written format, which this study fulfils (Braun & Clarke, 2012).

## **8.5. Results**

### **8.5.1. Preliminary Analysis**

#### **8.5.1.1. *Reliabilities of measures at Time 1 and Time 4***

In this study, the reliabilities of the measures were assessed at Time 1 and Time 4. According to George and Mallery's (2003) rules of thumb, WLEIS demonstrated an excellent internal consistency with  $\alpha = 0.80$  at Time 1 and  $\alpha = 0.88$  at Time 4. Both ITI and ITP also revealed good reliability. For ITI,  $\alpha = 0.78$  at Time 1 and  $\alpha = 0.82$  at Time 4, whereas for ITP,  $\alpha = 0.72$  at Time 1 and  $\alpha = 0.81$  at Time 4. ITE, however, demonstrated poor internal consistency with  $\alpha = 0.44$  at Time 1, and  $\alpha = 0.50$  at Time 4. Since these lower alpha values can be affected by the low number of items, a decision was made to use this scale in this study

(Cortina, 1993, as cited in Samuels, 2015). The OCB subscales (i.e., civic virtue and sportsmanship) revealed fairly acceptable internal consistencies. For the civic virtue subscale,  $\alpha = 0.69$  at Time 1, and  $\alpha = 0.54$  at Time 4 and for the sportsmanship subscale,  $\alpha = 0.67$  at Time 1, and  $\alpha = 0.59$  at Time 4. Lastly, the work engagement scale was also included in the analysis, albeit with questionable internal consistencies,  $\alpha = 0.59$  at Time 1 and  $\alpha = 0.56$  at Time 4. As mentioned above, these values can be adversely affected by the low number of scale items (Cortina, 1993, as cited in Samuels, 2015).

Table 8.1. below depicts the means and standard deviations of both the intervention and the comparison group. The table also illustrates Cronbach's alphas of the scales in Time 1 and Time 4.

**Table 8.1**

*Means, Standard Deviations and Reliabilities of the Scales.*

Scale/ Subscale	Intervention Group				Comparison Group				Cronbach's alpha	
	Time 1		Time 4		Time 1		Time 4			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Time 1	Time 4
<b>WLEIS</b>	4.05	.38	4.16	.33	3.95	.46	3.94	.38	.80	.88
<b>ITI</b>	2.93	1.13	3.66	1.39	2.94	1.14	2.91	1.14	.78	.82
<b>ITP</b>	2.94	1.15	3.40	1.40	2.94	1.06	3.02	1.16	.72	.81
<b>ITE</b>	4.24	.87	4.46	.88	4.09	.85	4.20	.81	.44	.50
<b>CV</b>	3.73	.67	3.84	.57	3.63	.57	3.73	.54	.69	.54
<b>SM</b>	3.27	.92	3.59	.77	3.16	.92	3.20	.73	.67	.59
<b>WE</b>	3.95	.87	4.08	.82	3.76	.87	3.66	.74	.59	.56

*\*Note: WLEIS= Wong and Law Emotional Intelligence Scale; ITI= Implicit Theories of Intelligence; ITP = Implicit Theories of Personality; ITE= Implicit Theories of Emotion; CV= Civic Virtue; SM= Sportsmanship; WE= Work Engagement*

### 8.5.1.2. Attrition Analysis

In total, 305 participants completed the measurements at Time 1. Only 1 participant was removed due to missing data. Of these participants, only 144 attended session 1 of the intervention (i.e., Time 2). Only 94 participants completed the intervention (i.e., Time 3), of which 86 completed the measurements at follow-up (i.e., Time 4). The attrition rate between Time 2 and Time 3 was 34.72%. An independent samples t-test was carried out to examine the differences in EI, implicit theories and work engagement scores between those who completed the intervention (i.e., 94) and those who dropped out (i.e., 50). A MANOVA was conducted to test the differences in OCB-subcales (i.e., civic virtue and sportsmanship) scores between these two groups. An independent samples t-test indicated no significant differences between two groups on EI, implicit theories and work engagement: emotional intelligence,  $t(135) = .03$ ,  $p = .98$ ; implicit theories of intelligence,  $t(142) = -.92$ ,  $p = .36$ ; implicit theories of personality,  $t(141) = -.29$ ,  $p = .77$ ; implicit theories of emotion,  $t(141) = .26$ ,  $p = .80$ ; work engagement,  $t(132) = .43$ ,  $p = .67$ .

MANOVA results indicated a significant difference between the intervention group and the dropouts on combined civic virtue and sportsmanship,  $F(2, 135) = 4.59$ ,  $p = .01$ , partial  $\eta^2 = .06$ . Due to two dependent variables in the model, an adjusted alpha level of .03 was applied as suggested by statistics experts (Pallant, 2007; Tabachnick & Fidell, 2007). Upon close examination, the intervention group and dropouts only differed in sportsmanship scores,  $F(1, 136) = 4.94$ ,  $p = .03$ , partial  $\eta^2 = .04$ . The mean scores revealed slightly higher scores on sportsmanship for the intervention group ( $M = 3.23$ ,  $SD = .88$ ) compared to the dropout mean scores ( $M = 2.89$ ,  $SD = .86$ ). The implications of these results will be discussed later.

### 8.5.1.3. *Equivalence of Data*

An independent-samples t-test was conducted to compare the emotional intelligence, implicit theories (i.e., ITI, ITP and ITE) and work engagement scores for the intervention and comparison groups at baseline (i.e., Time 1). Results indicated that the intervention and the comparison group were equivalent at Time 1 in all these variables (emotional intelligence  $p = .14$ ; implicit theories of intelligence  $p = .95$ ; implicit theories of personality  $p = .99$ ; implicit theories of emotion  $p = .28$ ; work engagement  $p = .17$ ). Table 8.2. below illustrates the findings more succinctly.

**Table 8.2.**

*Independent Samples t-test results for EI, Implicit Theories and Work Engagement at Time 1*

Variable	Group	Mean	Std.Deviation	Levene Statistics (Sig)	Sig (p-value)
EI	Intervention	4.05	.382	<b>.20</b>	<b>.14</b>
	Comparison	3.95	.461		
ITI	Intervention	2.93	1.13	<b>.80</b>	<b>.95</b>
	Comparison	2.94	1.14		
ITP	Intervention	2.94	1.15	<b>.41</b>	<b>.99</b>
	Comparison	2.94	1.06		
ITE	Intervention	4.24	.87	<b>.97</b>	<b>.28</b>
	Comparison	4.09	.85		
Work Engagement	Intervention	3.95	.87	<b>.54</b>	<b>.17</b>
	Comparison	3.76	.87		

*\*Note= EI= Emotional Intelligence; ITI= Implicit Theories of Intelligence; ITP = Implicit Theories of Personality; ITE= Implicit Theories of Emotion*

A MANOVA was performed to examine the differences between the intervention and comparison groups in the OCB subscales (i.e., civic virtue and sportsmanship). Results from this analysis indicated no significant difference between these two groups on combined civic virtue and sportsmanship,  $F(2, 153) = 1.75, p = .18$ . Table 8.3. below depicts essential information on these findings.

**Table 8.3.**

*MANOVA results for OCB subscales (i.e., civic virtue and sportsmanship) at Time 1*

Variable	Group	Mean	Std.Deviation	Levene Statistics (Sig)	Sig (p-value)
Civic virtue	Intervention	3.73	.66	.03	.28
	Comparison	3.63	.57		
Sportsmanship	Intervention	3.26	.92	.50	.21
	Comparison	3.08	.88		

Overall, these findings demonstrate that the intervention and the comparison group were equal at Time 1 in all study variables. Consequently, differences between these groups observed post-intervention might be attributed to the intervention. The following section presents the results from a mixed MANOVA and repeated measures.

### 8.5.2. Mixed ANOVA Results

A mixed ANOVA was performed to assess the impact of an intervention on participants' EI; implicit theories (i.e., implicit theory of intelligence, implicit theory of personality and implicit theory of emotion); OCB-subcales (i.e., civic virtue and sportsmanship), and work engagement across two time periods (Time 1, pre-intervention and Time 4, follow-up). Assumptions were tested before the analysis.

#### 8.5.2.1. *Mixed ANOVA for interaction effects of time and group on EI (i.e., and its subscales) as measured by the WLEIS.*

Normal Q-Q Plots and nonsignificant ( $p > .05$ ) Kolmogorov Smirnov statistics (Pallant, 2007) showed that data for the WLEIS was normal for both groups (i.e., intervention and comparison) at both time points (i.e., Time 1 and Time 4). Levene's test was not violated; Time 1 ( $p = .29$ ); Time 4 ( $p = .10$ ). The Box's  $M$  test of equality of variance-covariance matrices was nonsignificant ( $p = .24$ ), suggesting that this assumption was not violated (Mayer, 2013).

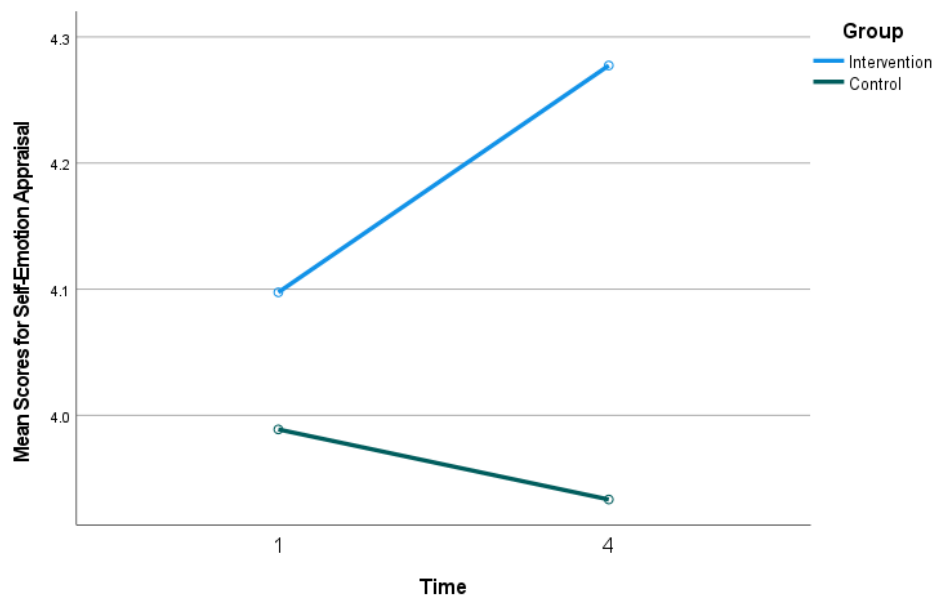
Results for a mixed ANOVA indicated that there was no significant interaction between time and group,  $F(1, 156) = 2.78, p = .10, \text{partial } \eta^2 = .02$ . However, there was a substantial main effect for group,  $F(1, 156) = 11.88, p = .001, \text{partial } \eta^2 = .07$ . The intervention group demonstrated slightly higher mean scores ( $M = 4.11$ ) compared to the comparison group ( $M = 3.94$ ).

Moreover, a mixed ANOVA was computed for all the EI subscales, i.e., self-emotion appraisal, other's emotion appraisal, use of emotion and regulation of emotion. Despite significant Kolmogorov-statistics for data in all subscales, the Normal Q-Q Plots did not show extreme deviation of data from normality. For Self-emotion appraisal (SEA), the Levene's test was not violated at Time 1 ( $p = .70$ ) but was violated at Time 4 ( $p = .01$ ). The Box's  $M$  test of

equality of variance-covariance matrices was also violated ( $p = .01$ ). Due to the robustness of the ANOVA, analysis was carried out despite these violations (Mayer, 2016). Results revealed a significant interaction between group and time,  $F(1, 155) = 5.62, p = .02$ , partial  $\eta^2 = .04$ . Thus, there was a significant difference in SEA scores across the intervention and comparison groups at different time points. Figure 8.2. below depicts a significant interaction between time and group on SEA.

**Figure 8.2.**

*A significant interaction between time and group on Self-Emotion Appraisal*



Separate between-subjects and within-subjects ANOVAs were performed to explore these differences further. Between-subject ANOVAs were conducted to test the differences between groups (i.e., intervention and comparison) at Time 1 and Time 4. This analysis revealed a non-significant difference in SEA scores between the intervention and the

comparison group at Time 1 ( $p = .25$ ). Interestingly, there was a significant difference in scores between groups at Time 4:  $F(1, 161) = 22.69, p = .00$ , partial  $\eta^2 = .12$ . The intervention group demonstrated higher mean scores ( $M = 4.27; SD = .39$ ) compared to the comparison group ( $M = 3.93; SD = .54$ ). Furthermore, within-subject ANOVAs were performed to explore the differences in SEA scores between Time 1 and Time 4 for each group. For the intervention group, SEA scores increased significantly over time;  $F(1, 81) = 9.02, p = .004$ , partial  $\eta^2 = .10$ . Mean scores for the intervention group were slightly higher at Time 4 ( $M = 4.28; SD = .38$ ) compared to mean scores at Time 1 ( $M = 4.10; SD = .48$ ). The change in scores over time for the comparison group was non-significant ( $p = .49$ ).

For Others' Emotion Appraisal (OEA), the Levene's test was not violated at both time points; Time 1 ( $p = .73$ ), Time 4 ( $p = .52$ ). The Box's  $M$  test of equality of variance-covariance matrices was also not violated ( $p = .22$ ). Findings from a mixed ANOVA revealed a non-significant interaction between group and time  $F(1, 150) = 1.14, p = .29$ , partial  $\eta^2 = .01$ . However, there was a significant main effect for group,  $F(1, 150) = 6.62, p = .01$ , partial  $\eta^2 = .04$ . The intervention group demonstrated slighter higher mean scores ( $M = 3.83$ ) compared to the comparison group ( $M = 3.68$ ).

For Use of Emotion (UOE), the Levene's test was not violated at both time points; Time 1 ( $p = .24$ ), Time 4 ( $p = .68$ ). The Box's  $M$  test of equality of variance-covariance matrices was also not violated ( $p = .69$ ). Findings from a mixed ANOVA revealed a non-significant interaction between group and time  $F(1, 158) = .04, p = .84$ , partial  $\eta^2 = .00$ . Lastly, for Regulation of Emotion (ROE), as in the other subscales, the Levene's test was not violated at both time points; Time 1 ( $p = .15$ ), Time 4 ( $p = .77$ ). The Box's  $M$  test of equality of variance-covariance matrices was also not violated ( $p = .83$ ). Results from a mixed ANOVA revealed a non-significant interaction between group and time  $F(1, 152) = .90, p = .35$ , partial  $\eta^2 = .01$ .



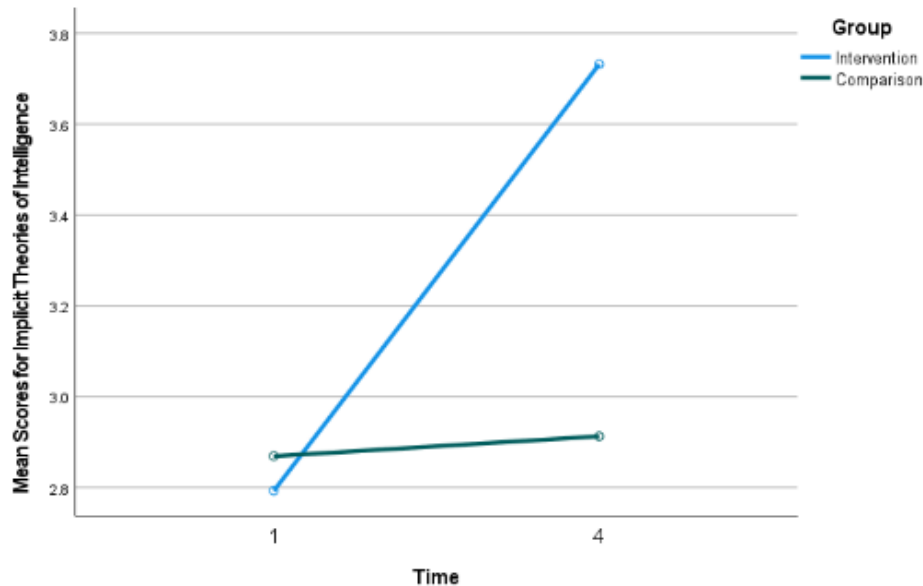
Overall, results indicated the non-existence of an interaction effect between group and time for total EI and all EI subscales, except for SEA. The findings revealed a significant difference in SEA scores between the intervention and the comparison group post-intervention. The intervention group demonstrated an increase in SEA scores post-intervention compared to a comparison group.

**8.5.2.2. *Mixed ANOVA results for interaction effects of time and group on Implicit Theories (i.e., implicit theories of intelligence, implicit theories of personality; implicit theories of emotion)***

Data for all implicit theories showed a slight deviation from normality, as was shown by significant Kolmogorov Smirnov statistics and Normal Q-Q Plots. For implicit theories of intelligence (ITI), Levene's test of homogeneity was not violated at Time 1 ( $p = .80$ ) but was violated at Time 4 ( $p = .01$ ). The assumption of the equality of variance-covariance matrices (Box's  $M$  statistic) was not violated ( $p = .10$ ). Results revealed a significant interaction between group and time,  $F(1, 166) = 9.84, p = .00, \text{partial } \eta^2 = .06$ . These findings suggest a significant difference in ITI scores across the intervention and comparison groups at different time points. Figure 8.3. below depicts a significant interaction between time and group on ITI.

**Figure 8.3.**

*A significant interaction between time and group on ITI*



To further investigate this difference, separate between-subjects and within-subjects ANOVAs were carried out. Between-subjects ANOVA was performed separately to test the differences between groups (i.e., intervention and comparison) at Time 1 and Time 4. Results indicated that there was no significant difference in ITI scores between the intervention and the comparison group ( $p = .95$ ) at Time 1. However, at Time 4, there was a significant difference in ITI scores between groups:  $F(1, 166) = 14.28, p = .00, \text{partial } \eta^2 = .08$ . The intervention group demonstrated higher mean scores ( $M = 3.66; SD = 1.29$ ) than the comparison group ( $M = 2.91; SD = 1.14$ ). Moreover, within-subjects ANOVA was carried out to examine the differences in ITI scores between the two-time points for each group. Results showed that for the intervention group, ITI scores increased significantly over time;  $F(1, 85) = 19.84, p = .00, \text{partial } \eta^2 = .19$ . Mean scores for this group were lower at Time 1 ( $M = 2.93; SD = 1.13$ )

compared to the mean scores at Time 4 ( $M = 3.66$ ;  $SD = 1.39$ ). On the other hand, the change in ITI scores over time for the comparison group was non-significant ( $p = .88$ ).

For implicit theories of personality (ITP), Levene's test was not violated at Time 1 ( $p = .41$ ) but was violated at Time 4 ( $p = .01$ ). Box's  $M$  statistic showed that the covariance matrices are equal across groups; thus, it was not violated ( $p = .02$ ). Results indicated that there was no interaction between time and group,  $F(1, 166) = 2.67$ ,  $p = .11$ , partial  $\eta^2 = .02$ . Interestingly, there was a significant main effect for time;  $F(1, 166) = 5.29$ ,  $p = .02$ , partial  $\eta^2 = .03$ . Results showed that ITP scores at Time 4 ( $M = 3.21$ ) were higher than those at Time 1 ( $M = 2.94$ ).

Lastly, for implicit theories of emotion (ITE), Levene's test of homogeneity was not violated at both time points (Time 1,  $p = .97$ ; Time 4,  $p = .37$ ). The assumption of equal covariance matrices was also not violated,  $p = .49$ . Mixed ANOVA results demonstrated no significant interaction between time and group,  $F(1, 166) = .03$ ,  $p = .53$ , partial  $\eta^2 = .00$ .

Overall, the interaction between time and group was significant for only ITI. Results indicated an increase in ITI scores over time for the intervention group. The intervention group also showed higher scores in ITI compared to the comparison group.

### **8.5.2.3. *Mixed ANOVA results for interaction effects of time and group on OCB- subscales (i.e., civic virtue and sportsmanship)***

A significant Kolmogorov Smirnov showed that data for both civic virtue and sportsmanship deviated from normality for both groups at both time points. However, a fairly normal distribution was observed upon close examination of the Normal Q-Q Plots. For civic virtue, Levene's test of homogeneity was violated at Time 1 ( $p = .03$ ) but not at Time 4 ( $p = .50$ ). Box's  $M$  statistic showed that the assumption of equal covariance matrices was not

violated ( $p = .60$ ). Mixed ANOVA results showed no significant interaction between time and groups;  $F(1, 153) = .11, p = .74, \text{partial } \eta^2 = .00$ .

For sportsmanship, Levene's test of homogeneity was not violated at both time points; Time 1 ( $p = .67$ ), and at Time 4 ( $p = .44$ ). Box's  $M$  statistic showed that the assumption of equal covariance matrices was not violated ( $p = .52$ ). Results showed no significant interaction between time and groups;  $F(1, 163) = 2.77, p = .10, \text{partial } \eta^2 = .02$ . However, findings demonstrated a significant main effect for time;  $F(1, 163) = 5.20, p = .02, \text{partial } \eta^2 = .03$ . Sportsmanship scores were slightly higher at Time 4 ( $M = 3.41$ ) compared to scores at Time 1 ( $M = 3.22$ ). There was also a significant main effect for group;  $F(1, 163) = 5.20, p = .02, \text{partial } \eta^2 = .03$ . Estimated marginal means showed higher mean scores for the intervention group ( $M = 3.43$ ) than the comparison group ( $M = 3.20$ ).

#### **8.5.2.4. Mixed ANOVA results for interaction effects of time and group on work engagement**

Normal Q-Q Plots revealed that data was fairly normal for work engagement, despite a significant Kolmogorov-Smirnov statistic. Levene's homogeneity test was not violated at both time points; Time 1 ( $p = .87$ ) and at Time 4 ( $p = .54$ ). Box's  $M$  statistic showed that the assumption of equal covariance matrices was not violated ( $p = .49$ ). There was no significant interaction between group and time,  $F(1, 150) = 1.57, p = .21, \text{partial } \eta^2 = .01$ . However, results revealed a significant main effect for group;  $F(1, 150) = 8.70, p = .00, \text{partial } \eta^2 = .06$ . Estimated marginal means showed higher mean scores for the intervention group ( $M = 4.01$ ) than the comparison group ( $M = 3.71$ ).

The following section presents findings from the repeated measures analysis.

### 8.5.3. Repeated Measures ANOVA

A series of repeated-measures ANOVA was run to investigate the change in EI, implicit theories (i.e., implicit theory of intelligence, implicit theory of personality and implicit theory of emotion); OCB-subcales (i.e., civic virtue and sportsmanship), and work engagement scores over the four-time periods (Time 1, four weeks before the intervention, Time 2, immediately before the intervention, Time 3, immediately after the intervention, Time 4, four weeks after the intervention). Only the intervention group was included in the analysis. Assumptions were tested prior to the analysis.

#### 8.5.3.1. *Results for repeated measures ANOVA for EI (i.e., and its subscales) over time*

Data for EI showed a normal distribution at Time 1, 3 and 4. The distribution of data for EI showed a deviation from normality at Time 2. Mauchly's test of sphericity was violated,  $\chi^2(5) = 11.53, p = .04$ . Thus, a Greenhouse, Geisser correction was applied. Findings indicated a significant difference between the four-time points  $F(2.73, 215.62) = 5.96, p = .00$ , partial  $\eta^2 = .07$ . Bonferroni post hoc tests demonstrated significant mean differences between Time 1 ( $M = 4.02, SD = .37$ ) and Time 3 ( $M = 4.16, SD = .30$ ). In addition, mean scores at Time 2 ( $M = 3.99, SD = .39$ ) statistically differed from those at Time 3 ( $M = 4.16, SD = .30$ ) and Time 4 ( $M = 4.14, SD = .31$ ).

Moreover, results also revealed significant differences between four-time points on the WLEIS subscales. Normal-QQ Plots revealed a fairly normal distribution with slight deviations at some time points for the EI subscales. For self-emotion appraisal (SEA), Mauchly's test of sphericity was not violated,  $\chi^2(5) = 10.22, p = .07$ . Findings indicated significant difference in mean scores between the four-time points,  $F(3, 237) = 7.32, p = .00$ , partial  $\eta^2 = .09$ . Bonferroni

post hoc tests demonstrated significant mean differences between Time 1 ( $M = 4.09, SD=.48$ ) and Time 4 ( $M=4.28, SD=.39$ ). Mean scores at Time 2 ( $M = 4.03, SD=.51$ ) statistically differed from those at Time 3 ( $M =4.22, SD= .39$ ) and Time 4 ( $M = 4.28, SD= .39$ ).

For others' emotion appraisal (OEA); the Mauchly's test of sphericity was not violated,  $\chi^2 (5) = 6.29, p= .28$ . Results revealed differences in mean scores between the four-time points,  $F (3, 240) = 3.95, p = .01$ , partial  $\eta^2 = .05$ . Post hoc tests indicated difference in mean scores between Time 1 ( $M = 3.75, SD= .50$ ) and Time 3 ( $M = 3.94, SD =.47$ ). Furthermore, for use of emotion (UOE); the sphericity assumption was violated,  $\chi^2 (5) = 15.06, p= .01$ , therefore a Greenhouse-Geisser correction was applied. Results demonstrated a statistically significant difference between the four-time points,  $F (2.69, 207.22) = 2.71, p =.05$ , partial  $\eta^2 = .03$ . However, post hoc tests did not yield any significant differences between time points.

Lastly, for regulation of emotion (ROE), Mauchly's test of sphericity was not violated,  $\chi^2 (5) = 3.07, p=.69$ . There was no significant difference in mean scores between the four-time points,  $F (3, 204) = 1.72, p =.17$ , partial  $\eta^2 = .03$ .

#### **8.5.3.2. Results for repeated measures ANOVA for Implicit Theories (i.e., implicit theories of intelligence, implicit theories of personality and implicit theories of emotion) over time**

Normal Q-Q Plots and the Kolmogorov Smirnov showed that data for all implicit theories deviated from normality at all time points. For implicit theories of intelligence (ITI), Mauchly's test of sphericity was violated,  $\chi^2 (5) = 19.17, p =.04$ , therefore a Greenhouse-Geisser correction was applied. There was a significant effect for time, suggesting mean differences between the four-time points,  $F (2.57, 218.41) = 9.72, p =.00$ , partial  $\eta^2 =.10$ . Bonferroni post hoc tests demonstrated significant mean differences between Time 1 ( $M =$

2.93;  $SD = 1.13$ ) and Time 3 ( $M = 3.39$ ;  $SD = 1.35$ ). Time 1 ( $M = 2.93$ ;  $SD = 1.13$ ) was also statistically significant from Time 4 ( $M = 3.66$ ;  $SD = 1.39$ ). In addition, there was a significant difference in mean scores between Time 2 ( $M = 3.13$ ;  $SD = 1.23$ ) and Time 4 ( $M = 3.66$ ;  $SD = 1.39$ ).

For implicit person theories (ITP), Mauchly's test of sphericity was violated,  $\chi^2(5) = 11.97$ ,  $p = .04$ , therefore a Greenhouse-Geisser correction was applied. Repeated measures ANOVA results indicated a significant difference in mean scores between the four-time points,  $F(2.72, 230.97) = 3.88$ ,  $p = .01$ , partial  $\eta^2 = .04$ . Post hoc tests revealed a significant difference in mean scores between Time 1 ( $M = 2.94$ ;  $SD = 1.15$ ) and Time 4 ( $M = 3.40$ ;  $SD = 1.40$ ). Lastly, there was also a significant difference in mean scores between the four-time points for implicit theories of emotion (ITE). In this analysis, Mauchly's test of sphericity was not violated,  $\chi^2(5) = 10.54$ ,  $p = .06$ . There was a significant effect for time,  $F(3, 255) = 3.82$ ,  $p = .01$ , partial  $\eta^2 = .04$ . Post hoc tests demonstrated significant mean differences between Time 2 ( $M = 4.12$ ,  $SD = .82$ ) and Time 4 ( $M = 4.46$ ,  $SD = .88$ ).

### **8.5.3.3. Results for repeated measures ANOVA for OCB-subcales (i.e., civic virtue and sportsmanship) over time**

Repeated measures ANOVA was computed separately for the OCB-subcales. Normal Q-Q plots showed that there was no extreme deviation from normality for civic virtue (CV) at all time points. However, for sportsmanship (SM), data showed a deviation from normality. For CV, results revealed that Mauchly's test of sphericity was violated,  $\chi^2(5) = 22.87$ ,  $p = .00$ , therefore, a Greenhouse-Geisser correction was applied. There was no significant effect for time,  $F(2.46, 191.74) = .86$ ,  $p = .44$ , partial  $\eta^2 = .01$ .

For SM, Mauchly's test of sphericity was violated,  $\chi^2 (5) = 10.97, p = .05$ , therefore a Greenhouse-Geisser correction was applied. There was a statistically significant difference in mean scores between time points,  $F (2.77, 218.83) = 5.16, p = .00$ , partial  $\eta^2 = .06$ . Post hoc tests revealed significant difference in mean scores between Time 1 ( $M = 3.53, SD = .92$ ) and Time 3 ( $M = 3.83, SD = .68$ ); and between Time 1 and Time 4 ( $M = 3.85, SD = .72$ ).

#### **8.5.3.4. Results for repeated measures ANOVA for Work Engagement**

Data for work engagement was fairly normal at all time points. Results showed that Mauchly's test of sphericity was violated,  $\chi^2 (5) = 17.70, p = .00$ , therefore, a Greenhouse-Geisser correction was applied. There was no significant effect for time,  $F (2.56, 184.28) = 1.66, p = .18$ , partial  $\eta^2 = .02$ .

Taken together, mixed ANOVA and repeated measures findings indicated that the intervention was effective to some extent. The intervention group showed an increase in self-emotion appraisal relative to the comparison group. This suggests that the intervention group gained an ability to understand their own emotions. The intervention group also showed a growth mindset for implicit theories of intelligence, which is indicative of a belief that intelligence is malleable. The significant impact of the GMEI intervention in the intervention group can be demonstrably observed in the findings from repeated measures ANOVA. Results showed an increase in total EI, self-emotion and others' emotion appraisal abilities over time. The intervention group also revealed a growth mindset post-intervention in all implicit theories. Thus, participants believed that intelligence, personality, and emotions are not fixed entities but are amenable to change post-intervention.

Interestingly, the impact of this intervention on the outcomes, i.e. organisational citizenship behaviour subscales (civic virtue and sportsmanship) and work engagement, was



relatively marginal. Results showed no significant differences between the intervention and the comparison groups for all the outcomes. The effect of time on the intervention group was also non-significant for all outcomes, except for sportsmanship. Findings showed an increase in sportsmanship scores for the intervention group post-intervention.

These quantitative findings are crucial, however, they may neglect significant factors essential in intervention studies, such as the experiences of participants during the intervention and other process variables that may influence the implementation and delivery of the intervention. To this effect, the following section presents the findings from the intervention evaluation.

#### **8.5.4. Intervention Evaluation Findings**

The intervention evaluation component aimed to capture the qualitative impact of the GMEI intervention and factors that facilitated or hindered the effective implementation of the intervention. Kirkpatrick's (2013) intervention evaluation questionnaire was employed to understand participants' perceptions and experiences during the intervention. Themes from the semi-structured interview were organised in accordance with Neilsen & Randall's (2013) intervention evaluation framework (i.e., mental models, intervention content and implementation, intervention context).

##### **8.5.4.1. *The Kirkpatrick Evaluation Questionnaire***

Descriptive statistics were conducted to gain insight into the distribution of scores in the Kirkpatrick evaluation tool. Findings include how participants reacted to the intervention, which includes participants' engagement and perceptions regarding the intervention's practical utility (Kirkpatrick & Kirkpatrick, 2016). Results are depicted in Table 8.4. below.

**Table 8.4***The Kirkpatrick Evaluation Questionnaire: Descriptive findings*

Items	Mean	Std.Dev.
<i>I took responsibility for being involved</i>	7.96	1.92
<i>I was engaged with what was going on the programme during</i>	8.12	2.02
<i>The classroom environment helped me to learn</i>	8.55	1.78
<i>My learning was enhanced by the facilitator</i>	8.50	1.68
<i>This programme held my interest</i>	8.71	1.63
<i>I understand how to apply what I learnt</i>	8.21	1.76
<i>The course material will be helpful for my future success</i>	8.67	1.56
<i>I will be able to use what I learnt immediately</i>	8.12	2.033
<i>What I learned in the class will help me on the job</i>	8.70	1.62
<i>I understand why this programme was offered</i>	8.52	1.71
<i>The information in this programme is relevant</i>	8.90	1.52
<i>I received helpful information prior to the session</i>	8.12	2.27
<i>Taking this programme was worth my time</i>	8.42	2.06
<i>I will recommend this programme to my peers</i>	9.13	1.30
<i>I would be able to help others with what I learned</i>	8.89	1.33
<i>I would like a follow-up to help me apply what I learned</i>	8.46	1.64
<i>The presentation style of the instructor contributed to my learning</i>	8.98	1.38
<b>ENGAGEMENT</b>	<b>8.37</b>	<b>1.36</b>
<b>RELEVANT</b>	<b>8.50</b>	<b>1.51</b>
<b>SATISFACTION</b>	<b>8.63</b>	<b>1.36</b>

\*Note: 11-point (0-10) rating scale was used. (0- strongly disagree to 10- Strongly Agree)

All item scores are generally high, as presented by the means. Satisfaction scores ( $M=8.63$ ,  $SD=1.36$ ) are the highest, which indicates that participants were very satisfied with the programme. All items related to this dimension were high. These include the item about ‘‘Recommending the programme to peers’’ ( $M=9.13$ ,  $SD=1.30$ ) and ‘‘The presentation style of the instructor’’ ( $M=8.98$ ,  $SD=1.38$ ). Furthermore, participants thought the intervention was relevant ( $M=8.50$ ,  $SD=1.51$ ). A further examination of the table shows that items that

contributed to this score include “*What I learned in the class will help me on the job*” ( $M=8.70$ ,  $SD=1.67$ ) and “*The information in this programme is relevant*” ( $M=8.90$ ,  $SD=1.52$ ). Finally, although engagement levels ( $M=8.36$ ,  $SD= 1.36$ ) are relatively lower than the satisfaction and relevance scores, these findings demonstrate that participants were engaged during the intervention.

Overall, participants were satisfied with the aspects of the programme. They also considered the programme relevant to their field of work. Results also revealed that participants were also engaged during the programme.

The following section presents the qualitative findings.

#### **8.5.4.2. *Qualitative Results: Findings from Semi-Structured Interviews***

Thematic analysis was used to analyse qualitative data. Results were organised into patterns and subsequently into themes. In total, eight themes were identified from the data. Seven themes were related to Neilsen and Randall’s (2013) framework, and one theme was cast as additional findings. Figure 8.4. below illustrates these themes.

**Figure 8.4**

*Eight Themes Emerged from Qualitative Data*

Nielsen & Randall's (2013) three-level intervention evaluation framework	Themes
<p><b>Mental Models</b></p> <p>Themes in this dimension deal with participants' perceptions and reactions towards the programme. It is also concerned with participants' views about the impact of the intervention.</p>	<p>Theme 1: Relevance in the Education Field</p> <p>Theme 2: <i>'It was developmental'</i>- Participants' Responsiveness</p>
<p><b>Intervention Design &amp; Implementation</b></p> <p>This dimension is concerned with the implementation of the program. The implementation also includes the processes that were employed, such as the recruitment strategies used to involve participants. It also deals with the reactions of participants towards the content and delivery of the intervention.</p>	<p>Theme 3: Recruitment Strategy: <i>'Social Media'</i></p> <p>Theme 4: Enjoyed the Lessons</p> <p>Theme 5: <i>'It was too short'</i>: Dosage not Enough</p>
<p><b>Intervention Context</b></p> <p>This dimension focuses on the external factors that affected the implementation of the intervention.</p>	<p>Theme 6: Time Clashes</p> <p>Theme 7: Logistical and Resource Constraints</p>
<p><b>Additional Findings</b></p> <p>Significant themes emerged from qualitative data. This is concerned with the vital comments and suggestions revealed by participants.</p>	<p>Theme 8: Integrated Approach</p>

These themes are further discussed below.

#### **8.5.4.2.1. *Mental Models***

This dimension is concerned with participants' perceptions and experiences during the intervention. Themes in this dimension reveal participants' views, experiences, and reactions toward the intervention. Participants indicated that the intervention is relevant and valuable in their field. They also stated that the intervention culminated in significant positive change. The themes are presented below.

##### ***Theme 1: Relevance in the education field***

This theme is concerned with the perceptions of participants regarding the intervention. It implies that participants understood the significance and role of this intervention in the education field. All participants revealed that this intervention (i.e., especially the emotional intelligence component) is valuable in the teaching practice. They stated that the information from the intervention could assist teachers in effectively coping with the challenges of the teaching practice, such as dealing with misbehaving learners. For example, **P5** reported: *‘I think this programme can help teachers a lot because they are working with learners, and learners sometimes misbehave. So, when they are aware of their emotions and are able to control them, they will be able to control learners' emotions because it will be easy for them to understand learners' emotions and understand why they behave the way they do.*

Similarly, **P7** stated: *‘If a learner does something that will make me angry, I will have to know how to control [my emotions], there are times where you realise that you are becoming angry, and sometimes you feel like you have to respond back, it is at that time that we have to apply all those things we learnt in the program’.*

**P11** emphasised the importance of using these learnings in their line of work. She reported: *“Since I specialise in education since I am training to be a teacher, I think that it helps me in a sense that I won't be as angry anymore...Because that's what you taught us, as much as it sounds ridiculous right now, but I [will] be able to control my feelings. So, whenever, maybe a learner gives me a problem, I will be [able] to maybe tackle it in a different manner which won't get me into trouble”*. **P12** and **P13** further substantiated this point.

**P12** stated *“Well, since I am an educator, it is very important because I deal with learners. Some [learners] come with different backgrounds where discipline--where it does not exist. For some, discipline exists, but in a different way. So, when I am mad, I must find an appropriate way to deal with learners. So, it is very important that I am able to control my emotions so that I don't hurt anybody and I don't break the rules. Since, especially in schools now, corporal punishment does not work, so you have to find a better way to deal with things.*

**P13** further elaborated and stated *“it is very important in education. For instance, corporal punishment is abolished now. So, because of learners' behaviour in the class, if you failed to properly control your emotions, you might end up using corporal punishment”*.

### ***Theme 2: “It was developmental”- Participant Responsiveness***

In addition to the relevance and significance of the intervention, participants revealed how they experienced the programme and its impact in various ways. Overall, participants perceived the intervention as developmental and educational. They commented on how it contributed to their self-awareness and personal development. Participants also shared how the intervention changed their perceptions and attitudes.

Several participants indicated that the experience was educational. They reported how the insights gained contributed to their personal development and growth. **P1** said, *“I think the*

*programme was developmental. It also contributed much to my well-being''*. Similarly, **P11** described it as an educational experience as she learnt valuable skills and techniques. She elucidated, *‘‘It was a very educational experience because I learnt some of the things that I never knew. And, number two, I acquired skills. I had a problem with dealing with anger when I am agitated. So, usually, I just do something different that you told me, that sometimes I just need to convince myself to calm down, so that really helped me’’*.

**P10** also attested that she acquired self-awareness skills to recognise, understand and manage her and others' emotions. She reported, *‘‘The programme helped me to develop my self-esteem. It helped me to develop my self-control and improve my self-awareness. It helped me to recognise my emotions and other people's emotions. And now I am able to create healthier relationships with others’’*. Furthermore, for some participants, not only did it contribute to their personal growth, but it changed their mindsets, perceptions, and attitudes. **P2** reported, *‘‘After the programme, I have changed my perception on how I view things pertaining the experiences of other people’’*. Similarly, **P4** stated, *‘‘I have gained a lot of experience. What I can say is that the way I say or do things is kind of different now.*

The following section presents themes related to the 'intervention design and implementation' dimension.

#### **8.5.4.2.2. Intervention Design and Implementation**

Themes under this dimension include participants' perceptions regarding the design or content of the intervention and the processes followed during the implementation phase. Participants shared their views on the recruitment strategies employed and the lessons

delivered. They indicated some level of satisfaction with the recruitment strategy. Nevertheless, they noted that more could have been done to recruit participants. In terms of the intervention content, participants revealed that the lessons were structured and well delivered. They also stated that the lessons provided a space for them to interact and share ideas, which strengthened their enthusiasm. Most interestingly, participants shared their views on the short dosage of the intervention. These themes are presented separately below.

### ***Theme 3: Recruitment Strategy- 'Social Media'***

Participants had different views in terms of the recruitment strategies employed. Some participants indicated that the strategies employed were good. However, most participants stated that more could have been done to attract and involve the participants.

**P8** recalled, ‘*You remember that you came into class and introduced the whole point of doing this research, and you said people must choose whether they want to participate [or not], that was good*’. **P2** indicated that the strategies used to recruit participants were good because they gathered enthusiastic people relevant to this programme. He stated, ‘*Your strategies were really good. You used certain good strategies, and you used the kind of people that can be helpful to implement such a programme even in the outside world. So, your strategies were good because you attracted the ones who are relevant to the programme*’.

Nonetheless, participants suggested that more could have been done to gain participants. They commented on the role of social media in involving participants.

*‘I think you must do more in terms of gaining the participants. I think you should do that advertising the programme, maybe on social media, that is where students are based or spend much time in’ (P1)*



*“I think such a programme needs publicity, maybe [you can] use social media. Lots of us, such as students, have maybe a group whereby we gather, and we spend a lot of time to looking at what goes on. Because we are Group B or C, maybe the other groups were not aware of the programme” (P2).* Similarly, when **P5** was asked what could have been done to increase participation, she said, *“Use a Facebook page. People can be interested in attending the programme. You might even find those who are not attending classes but who might be interested in attending the programme”.*

#### ***Theme 4: Enjoyed the lessons***

In not so many words, participants revealed that the programme was well delivered. **P1** reported, *“I think the programme was well-conducted. I think it was well structured, and I think it reached a very fertile environment”.* On the same note, when **P9** was asked what he enjoyed the most during the programme, he stated, *“It was the lessons that you did”.* Furthermore, **P10** asserted that nothing should be changed in terms of content and delivery. She reported *“I think nothing much must be changed. The programme was well delivered. I think all was on point about the delivery of the programme”.*

Some participants recalled specific lessons they thought were interesting.

*“There is no part I enjoyed than the ones we did towards the end, where we were debating if that person was right or wrong. The one who was bullied from primary school. I think that broadened our minds. And the one about emotions, that we must not allow emotions to control us” (P7)*

*The lesson that I enjoyed the most is when you brought that video. It showed us that you are teaching us about things that are happening in real life” (P8)*

Most importantly, participants revealed that they enjoyed the discussions and interactions during the programme. They indicated that the intervention provided a space for them to share their views. **P1** reported, *“I think talking was very much remarkable. Having the opportunity to talk freely about something we are afraid to talk about or confront. I think that was something remarkable about this programme”*.

Similarly, **P10** stated, *“I enjoyed because I was able to express my feelings. I also enjoyed sharing my ideas and opinions with others and hearing other people’s ideas and opinions”*. **P11** concurred, *“I enjoyed because we were just expressing ourselves, and we got to hear about what other people thought about everything that was being taught”*.

#### ***Theme 5: ‘It was too short’: Dosage not enough***

Despite the enthusiasm, most participants indicated that the intervention was rather too short. They stated that it limited them from fully expressing themselves and fully understanding the intervention’s content. **P6** stated, *“I think it was too short for me because we did touch everything, but some people were not given enough platform to express themselves because of time”*. Similarly, **P9** said, *“It was too short. Yes, we did learn a lot, but I feel like there are some other things we could have learnt”*. On the same note, **P12** reported, *“It was too short, because, you remember, most of us had something to say, but then we were deprived of the opportunity, because of time”*. She further stated, *“Emotional Intelligence is very complex, so I think it requires a lot of time to talk about it”*. **P13** also reported *“I think the time was too short because there is a lot we still wanted to learn and understand”*.

The following section presents themes related to the ‘intervention context’.

#### **8.5.4.2.3. Intervention Context**

Some external factors affected the implementation of the intervention. Almost all participants were concerned about clashes of demands which significantly affected the engagement levels and attendance rate. Intervention implementation was also affected by logistical and resource constraints, such as the change of venues and the conditions of some venues. These factors are presented below.

##### ***Theme 6: Time Clashes***

Most participants indicated that the timing was problematic. They revealed that clashes of demands prevented some participants from attending and continuing with the programme. **P6** asserted, *“The timing was bad, because we were attending classes, and we had to prioritise”*. **P7** echoed and said, *“I think the problem is the timing. Most people liked to attend, but the problem was that they were busy, and it clashed with other classes”*. Similarly, **P8** stated, *“What I can say is that, since it was during the day, some people had classes [to attend]. So, I think that really affected the programme because when we were attending the programme, some people had classes”*. **P12** also stated, *“During the day, most people who wanted to participate were in classes, so we had lots of clashes. Some wanted to participate but, they could not be there”*. **P13** also revealed that these time clashes caused attrition. She said, *“Some people could not even continue attending [the programme] because of clashes. Some of them attended and could not continue”*.

##### ***Theme 7: Logistical and Resource Constraints***

Logistical and resource constraints were also posed as barriers to the efficient implementation of the intervention. Some participants reported that venue change was disturbing and distracting. Participants preferred that the intervention be conducted in the same

venue throughout. **P6** asserted, *“In terms of the context, I can say that maybe some people were disturbed by the changing of venues. Some of them ended up not participating because of this”*. Similarly, **P13** reported, *“I think maybe, it would have been better maybe if we attended in the same lecture hall so that we know that at a certain time, we are meeting”*.

Furthermore, some participants indicated that some venues did not quite support the implementation of some intervention activities. For instance, **P9** said, *“some of the venues we used did not have the speakers, so we could not hear properly, but at least we saw the slides”*. **P11** also shared the same sentiments, and she reported, *“When we were meditating, I felt like, we, we just got unnecessarily noise, the echoing, so that kind of distracted the meditation a bit”*. **P4** also indicated that the venues were not comfortable for this kind of intervention. She stated, *“I don’t [think] the venues we used were appropriate, I think you need like a room where there are couches and where [we] could be comfortable”*.

However, few participants were satisfied with the venues and the setting. **P1** reported, *“The setting was fine. I won’t complain about the setting because mostly we used lecture halls. I think lecture halls are more suitable for these types of activities*. Similarly, **P2** stated, *“The setting was very good because all programmes are facilitated to our lecture halls. So, everything was so good”*.

#### **8.5.4.2.4. Additional Findings**

Contextual factors and experiences of participants presented above necessitate a provision of suggestions and guidance for conducting intervention-based studies in the education field. Significant comments were mentioned by participants in terms of integrating interventions within the curriculum. One vital suggestion revealed by participants was

embedding the intervention into the educational structure. They indicated that interventions like the GMEI should be given priority and be integrated into modules.

### ***Theme 8: Integrated Approach***

Participants reported that the intervention should be given a set time along with other modules. They also indicated that it should be embedded into certain modules to ensure efficient implementation. According to **P6**, *‘there must be a block of time that is given to the intervention’*. **P7** also stated *‘There is a module, called School Experience. Maybe this programme has to be incorporated within this module because, in this module, we are mainly talking about the behaviour of teachers and how we should behave as teachers. I think this is where the topic of emotions will fit’*. **P12** gave one suggestion and said *‘I think it would be better if it could be embedded in one of the educational psychology modules. It should be a priority, especially for those studying to become a teacher’*.

Overall, participants were satisfied with the intervention. Interestingly, they thought the intervention was useful and relevant in their field of work. It seems the intervention also changed participants’ *‘mental models’*. Participants revealed that the intervention was developmental and resulted in significant positive behavioural and cognitive changes. It can be concluded that the intervention was impactful, especially the emotional intelligence component. Nevertheless, participants felt that the recruitment strategy could be improved to increase participation. There were also concerns regarding the duration of the programme. Participants thought that it was too short and, therefore, not enough time to grasp the content. Other factors, such as time clashes and logistical and resource constraints, affected the implementation of the intervention. An integrated approach, where interventions such as the

GMEI are fully integrated into the curriculum, might be worthwhile to mitigate these challenges.

## **8.6. Discussion and Further Research**

The purpose of this study was to investigate the impact of a brief psychological intervention on preservice teachers' EI, mindsets or implicit theories, organisational citizenship behaviours, which included civic virtue and sportsmanship, and work engagement. This study also sought to uncover the experiences of PSTs during the intervention. To this effect, an evaluation component was included to delineate participants' perceptions and process factors that may have influenced the implementation of the programme. The inclusion of a comparison group sought to strengthen the internal validity of this study. The intervention and the comparison group were not different in all study variables at baseline, therefore, changes can be attributed to the intervention. Three research questions guided this inquiry and based on previous literature, four hypotheses were formulated. Figure 8.5. below clearly illustrates Study 3's research questions and hypotheses.

**Figure 8.5.**

*Research Questions and Study Hypotheses (Study 3)*

Research Questions	Hypotheses
<p>1. How does participation in a brief GMEI intervention affect preservice teachers' emotional intelligence, mindsets, organisational citizenship behaviour and work engagement compared to a comparison group?</p> <p><i>(Research question three of the thesis)</i></p>	<p>(H1a) The intervention group will demonstrate an increase in emotional intelligence and its subscales post-intervention <b><i>(partially supported)</i></b></p> <p>(H1b) The intervention group will demonstrate a growth mindset in all implicit theories (i.e. intelligence, personality and emotion) post-intervention <b><i>(partially supported)</i></b></p> <p>(H1c) The intervention group will demonstrate significantly higher scores in organisational citizenship behaviours (i.e. civic virtue and sportsmanship) post-intervention <b><i>(partially supported)</i></b></p> <p>(H1d) The intervention group will demonstrate higher scores in work engagement post-intervention <b><i>(not supported)</i></b></p>
<p>2. What are preservice teachers' perceptions of the GMEI?</p> <p><i>(Research question four of the thesis)</i></p>	
<p>3. What are the barriers to implementing the GMEI in education contexts?</p> <p><i>(Research question five of the thesis)</i></p>	

The first research question sought to understand the impact of the GMEI intervention on preservice teachers' EI, implicit theories, organisational citizenship behaviours (i.e. civic virtue and sportsmanship) and work engagement. Firstly, this study predicted that the intervention group would demonstrate an increase in EI and its subscales relative to the comparison group post-intervention. This hypothesis was partially supported. Mixed ANOVA results showed no interaction between group and time for total EI, which signalled a non-significant difference between the intervention and the comparison group. However, a positive change in one EI subscale (i.e., self-emotion appraisal or SEA) was observed on closer inspection. Results indicated a significant difference in SEA between the intervention and the comparison group, where the intervention group showed significantly higher mean scores. Therefore, the intervention group acquired an ability to understand one's emotions post-intervention.

It is noteworthy also to mention that the intervention group showed an increase in total EI over time. Only two EI subscales (i.e., self-emotion appraisal and others' emotion appraisal) demonstrated a significant increase in scores for the intervention group post-intervention. The qualitative findings, concerned with participants' perceptions of the GMEI intervention, corroborate these positive results. Drawing from participants' voices, the intervention included in this study was both developmental and instrumental. Through this programme, participants shared that they acquired essential self-awareness skills and gained crucial skills that they can use to handle challenging tasks. The findings of this study are in line with previous research. Past literature reveals that EI can be improved through training (Clarke, 2010; Groves et al., 2008; Hen & Sharabi-Nov, 2014).

Nevertheless, the failure of this intervention to enhance all EI abilities is also corroborated by past research. For example, Pool and Qualter's (2012) training programme



only enhanced two EI dimensions (i.e., understanding and managing emotions). Similarly, Nelis et al. (2009) revealed an increase in only three dimensions, i.e., regulating emotion, emotion management and emotion identification. This could be due to the duration of the training programme and strongly indicate that some EI abilities are more amenable to change through an intervention than others. This will be clearly explained later in this chapter.

Secondly, it was hypothesised that the intervention group would exhibit a growth mindset in all implicit theories (i.e., intelligence, personality and emotion) post-intervention. This hypothesis was also partially supported. Findings revealed a significant difference only in implicit theories of intelligence (ITI) between the intervention and the comparison group post-intervention. ITI scores for the intervention group also increased over time, indicating that the intervention group believed intelligence was malleable post-intervention. Although ITP and ITE did not reach a significant interaction effect between group and time, when inspected alone in the repeated measured analysis, the intervention group demonstrated a growth mindset in both ITP and ITE post-intervention. These results correspond to a plethora of prior research, which concluded that a growth mindset could be taught (Blackwell et al., 2007; Burnett et al., 2013; Schleider & Weisz, 2018; Yeager & Dweck, 2020).

The third hypothesis predicted that the intervention group would show an increase in organisational citizenship behaviours (i.e., civic virtue and sportsmanship). The findings of this study demonstrated partial support for this hypothesis. Results showed no difference in scores between the intervention and the comparison group in both civic virtue and sportsmanship scores. This lack of a difference between groups could be due to the culture of the teaching practice and teacher identity. As service workers, teachers are expected to demonstrate helping behaviours and positive attitudes. Thus, it is likely that preservice teachers in both the intervention and comparison groups have developed these behaviours through their education

and experience. However, on the analysis of the intervention group only, there was a significant difference in pre-test and post-test scores for the sportsmanship subscale. These positive findings for sportsmanship are conceptually plausible. Sportsmanship, defined as an ability to tolerate inconveniences without complaint, is said to be analogous to positive behaviour (Podsakoff et al., 1990).

As it is known, EI interventions are famous for cultivating positive behaviours and attitudes. For example, Castillo et al. (2013) and Hen and Sharabi-Nov (2014) reported that EI training programmes enhance empathetic abilities. To add, in their EI training programme, Brackett and Katulak (2006) reported improved relationships between teachers and all stakeholders (i.e., parents and learners). Correlational studies also confirm a strong association between EI and citizenship behaviours (Turnipseed, 2018; Yadav & Punia, 2016). Consequently, it is tempting to conclude that the EI feature of the intervention enhanced this ability to tolerate inconveniences to maintain positive relationships. Nevertheless, these results must be interpreted with caution. Attrition analysis revealed that the intervention group had higher sportsmanship scores than participants who dropped out. Therefore, it is likely that the intervention group consisted of individuals with this natural positive attitude.

Significant positive findings detected in this study could be explained by other notable aspects. Generally, participants were satisfied with the programme. The intervention was reported to be relevant and well presented. Perhaps these positive experiences during the intervention shaped participants' willingness to learn and openness to behavioural change to some extent. In fact, research shows that high satisfaction with the intervention results in positive behavioural outcomes (Schultes et al., 2015). For example, Pereira and Marques-Pinto (2017) found that participants were highly satisfied with their social and emotional learning programme, which contributed to the successful completion of the programme activities. These

findings are not surprising in this study, more specifically for preservice teachers. Preservice teachers are in the field that emphasises continuous learning, which may influence their enthusiastic participation (Ng, 2010). In a nutshell, participants' responsiveness could have influenced participants' engagement, translating to positive behavioural changes we observed in this study.

Moreover, the final hypothesis, which predicted that the intervention group would demonstrate an increase in work engagement scores, was not supported. Results revealed a non-significant interaction effect between time and group, and there was no significant change in work engagement over time for the intervention group. These findings were contrary to our expectations, considering a well-established association between this construct and EI and an arguably strong positive theoretical association with implicit theories (Keating & Helsin, 2015; Zeng, 2019). A plethora of literature demonstrates that EI is a significant predictor of work engagement (De Clercq et al., 2014; Extremera et al., 2018; Mérida-López et al., 2019). On the other hand, Keating and Helsin (2015) presented solid reasons pertaining to the likelihood of a growth mindset influencing engagement levels. They asserted that individuals with a growth mindset are more concerned with self-development. Thus, these individuals are more likely to expend effort and become more engaged in their work to ensure self-development (Keating & Helsin, 2015). Consequently, an intervention based on EI and growth mindsets was hypothesised to boost participants' engagement levels.

The failure of this intervention to achieve significant changes in outcomes such as other EI abilities, civic virtue and work engagement can be explained by a myriad of factors. One of these factors is the duration of the intervention. Participants revealed that the intervention was too short and insufficient to understand and apply the knowledge learned. Individuals need more time to develop EI abilities, which may not be easily achieved with only four sessions

(Pool & Qualter, 2012). The dose delivered, which refers to the amount of intervention delivered to participants, can affect the programme's overall impact (Linnan & Steckler, 2002). Perhaps more time is needed to unpack these concepts to detect significant changes. Behavioural attitudes such as civic virtue and work engagement may also be cultivated over a long period of time. Thus, follow-up sessions may be essential to cement the learnings to facilitate the holistic development of these positive behaviours. Furthermore, participants revealed some contextual factors that hindered the effective implementation of this intervention. Findings demonstrate that time clashes, logistics, and resource constraints affected the implementation and intervention delivery.

Participants stated that the programme clashed with their daily activities, which caused low completion rates and low commitment levels. Issues regarding the resources employed during the intervention were also raised. Participants felt some venues negatively interfered with the delivery of some intervention activities. These findings are not an anomaly in the education context. A literature review indicates that the context highly affects the implementation of a training programme (Griffin et al., 2017). In their study, Griffin et al. (2017) found that the implementation of their intervention in the education context was affected by the lack of time and lack of infrastructure to support the programme activities. Similarly, Evans (2015) and his colleagues reported that limited resources and competing demands shaped and affected the implementation of their school-based social and emotional learning programme. Overall, it is conceivable that these constraints negatively affected intervention outcomes.

In order to curtail the impact of these adverse factors, an integrated approach is suggested. Participants asserted that interventions such as the GMEI should be fully integrated and embedded in the curriculum to ensure effective implementation of this programme in the

education context. This notion is in line with the existing literature. According to Romasz et al. (2004), interventions in the educational field must be fully supported and integrated into the culture of the institution. Integrating the intervention into the curriculum could lessen the burden for both facilitators and participants. Undoubtedly, when interventions are supported, there is a great likelihood of successful intervention implementation (Ransford et al., 2009).

Overall, the findings of this study reveal that EI abilities, more specifically self-emotion appraisal and others' emotion appraisal, can be enhanced through training. An ability to understand one's and others' emotions is critical in the education field. Research posits that teachers who possess these skills are able to respond effectively to students' needs (Ramana, 2013). They tend to focus on students' strengths while adopting a positive learning approach (Hen & Sharabi-Nov, 2014; Mortiboys, 2013). Furthermore, these abilities are also positioned as a vital personal resource that contributes to overall well-being (Vesely et al., 2013). In addition, this study also confirmed that a growth mindset could be taught. Post-intervention, the intervention group demonstrated a positive belief that intelligence, personality and emotions are amenable to change. This incremental belief has been associated with many positive outcomes, such as well-being, achievement and adaptive coping mechanisms (Blackwell et al., 2007; King et al., 2012; Romero et al., 2014; Yeager et al., 2013). In addition, teachers with a growth mindset are likely to focus on improving students' abilities which may foster a positive learning environment.

The findings of this study have significant theoretical and practical contributions. To the researchers' knowledge, this is the first study linking the theory of mindsets and emotional intelligence pragmatically. These psychological concepts have been studied independently, and they both have demonstrated a positive impact, especially in the education context. The rationale for this was predicated on the assumption that a belief that human capabilities can

develop is likely to influence the improvement of EI abilities. Consequently, this study extends the academic knowledge by providing a foundation that can be referred to in the future development of EI interventions. Cabello and Fernández-Berrocal (2015) strongly suggest that a message about the malleability of personal attributes be included in EI interventions. Thus, this study provides a base that could be implemented in future EI interventions. Furthermore, the inclusion of a qualitative approach and an intervention evaluation component enriched the findings of the study. Intervention studies often overlook the impact of the process factors that could affect the implementation of the intervention. This study revealed several factors, including time clashes and resource constraints, that could affect the implementation of interventions in the education field. The findings of this research study could assist applied psychologists and practitioners in considering these factors in the design and implementation stage of interventions.

Results of this study could also inform the education policy and teacher education programmes. Participants in this study confirmed the relevance of this intervention in the education field. Currently, there are limited nationwide positive psychology interventions, especially in South Africa, aimed at equipping teachers, preservice teachers and learners with these valuable skills. Therefore, the results of this study could propel the nationwide implementation of such interventions in schools. The GMEI could also be introduced in teacher training programmes and part of continuous professional development for experienced teachers. This could be essential for creating positive, humanised pedagogical approaches and a much-needed caring and supportive culture in the education field.

Despite insightful findings, this study is not without its limitations and considerations for future research. The first limitation is the use of a quasi-experimental approach. Although multiple time points were employed to rule out some of the threats to internal validity, we cannot be certain that some factors did not impact the results of the study. For example, the results of this study may be affected by diffusion of treatment or contamination. This phenomenon occurs when the comparison group unintentionally receives the contents of the intervention (Doyle & Hickey, 2013). The intervention and the comparison group in this study interacted closely together; thus, it is likely that some of the content was shared. Contamination tends to reduce the intervention study's power to detect significant changes in outcomes (Howe et al., 2007). This might explain the results found in this present study to some extent. Consequently, future research studies could extend this research by implementing more robust research designs to prevent this bias. For example, more multiple points could be used, and an element of random assignment can also be employed to strengthen the research design.

The second limitation is the measures used in the study. Study 2, detailed in Chapter 7, showed that some questionnaires, such as the implicit theories of emotion and work engagement scales, had questionable internal consistencies. Although this may be due to a small number of items, it still raises justifiable concerns and thus warrants further investigation. It is also worth noting that only two OCB subscales were included in the study. Perhaps OCB dimensions not included in the study are more susceptible to change. Therefore, future studies could employ a well-rounded OCB scale for more insights. In addition, self-reported data provided by these questionnaires may also put the validity of the results into scrutiny. Self-report measures have been said to be susceptible to social desirability (Conte, 2005; Mayer et al., 2000; Tett et al., 2012). Future studies should consider supplementing research with peer-rated questionnaires. These questionnaires could provide an objective overview (see Kolar et

al., 1996), however, Paunonen and O'Neill (2010) caution against using these as a substitute for self-report measures.

The third limitation is the small sample size. This study consisted of 86 participants for the intervention and 82 for the comparison group. Only 13 participants from one university were available for the interviews. Small sample sizes have low statistical power needed to detect significant changes (Button et al., 2013). In addition, the fact that only participants from one university were interviewed means that potentially useful experiences were missed. However, given that the intervention was implemented in a typically similar environment and setting in both universities, it can be argued that participants' experiences and perceptions were generally the same. The findings of this study revealed that the recruitment strategy was not strong enough to attract and retain enough participants. Participants stated that using social media could assist the effective implementation of such interventions, especially in education settings. It is recommended that future studies include larger samples and use available modern technologies to ensure high retention and statistical power of the study.

Moreover, future studies should validate these findings using other samples, such as experienced teachers. This intervention study may be more beneficial to experienced teachers, considering they are more exposed to work pressures than preservice teachers. It would be interesting to investigate whether the impact of this intervention would be the same for experienced teachers. Using experienced teachers as a sample could also help detect any positive spillover effects of an intervention. Teachers interact more with learners; therefore, such intervention could foster a positive learning environment.

The fourth limitation of this study is time constraints. As extrapolated from the findings, many contextual factors hinder the effective implementation of intervention studies in the



education field. One of these factors is time clashes. These factors and the researcher's limited time to conduct the study affected the design and implementation. Participants also commented on the low dosage of the intervention. As a result, future education intervention studies should consider integrating the intervention into the education structure or curriculum to ensure effective implementation.

Finally, the fifth limitation is a lack of previous research studies on the causal associations between EI and implicit theories and the study outcomes (i.e., organisational citizenship behaviours and work engagement). Most research in this field is descriptive and correlational with no indication of whether such intervention grounded on EI and mindsets could cause a change to these behaviours. In fact, due to a lack of studies, it is unclear whether these outcomes could be developed through training (Schaufeli & Salanova, 2007; Yadav & Punia, 2013). The results of this study show that the ability of the GMEI intervention to enhance these positive behaviours is not conclusive. Although the intervention group did demonstrate an improvement in sportsmanship scores post-intervention, the validity of this finding is questionable given the attrition analysis results. Consequently, more studies are needed to ascertain these findings. Future studies should also investigate the effects of this intervention on other positive outcomes not included in this study.

## **8.7. Chapter Summary**

This chapter presented the findings of Study 3, which investigated the impact and process evaluation of an intervention grounded in mindsets and EI psychological theories. The findings of this study demonstrated that some EI abilities, especially self-emotion appraisal and others' emotions appraisal, can be enhanced more easily through training than others.

Qualitative data corroborated these findings where participants revealed that the intervention was developmental and transformed how they handled their emotions. Results also showed that a growth mindset could be trained. However, the impact of this intervention on study outcomes is inconclusive. Results showed that sportsmanship increased post-intervention, but these results should be interpreted cautiously due to the attrition findings, which revealed that the intervention group had significantly higher sportsmanship scores than the dropouts.

Several reasons can explain the non-significant findings. One of these is the dosage of the intervention. Participants felt that the intervention was not enough. Different contextual factors such as time clashes and logistical and resource constraints could have also affected the findings. Adopting an integrated approach, where the intervention is embedded in educational systems, was a valuable suggestion uncovered in this study.

The next chapter deals with Study 4, which investigates the relationship between study variables.

**CHAPTER 9 (STUDY 4): DIRECT AND INDIRECT RELATIONSHIPS  
BETWEEN IMPLICIT THEORIES, EMOTIONAL INTELLIGENCE,  
ORGANISATIONAL CITIZENSHIP BEHAVIOURS AND WORK ENGAGEMENT**

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**9.1. Study Overview**

Study 3 investigated the impact of a brief intervention on preservice teachers' (PSTs) mindsets or implicit theories, emotional intelligence, organisational citizenship behaviours (i.e., civic virtue and sportsmanship) and work engagement. This study (i.e., Study 4) investigates the relationships between these variables. This investigation addresses the following research questions and hypotheses depicted in Figure 9.1.

**Figure 9.1.**

*Research Questions and Study Hypotheses (Study 4)*

- |   |
|---|
| <p>1. What is the relationship between implicit theories (i.e., implicit theories of intelligence, personality and emotion) and emotional intelligence (i.e., and its subscales)? (<b>Research question six of the thesis</b>)</p> <ul style="list-style-type: none"><li>• <i>H1(a): There is a positive and direct relationship between implicit theories of intelligence and emotional intelligence (i.e., and its subscales)</i></li><li>• <i>H1(b): There is no direct relationship between implicit theories of personality and emotional intelligence (i.e., and its subscales)</i></li><li>• <i>H1(c): There is a positive and direct relationship between implicit theories of emotion and emotional intelligence (i.e., and its subscales)</i></li></ul> |
| <p>2. What is the relationship between emotional intelligence, organisational citizenship behaviour subscales (i.e., civic virtue and sportsmanship) and work engagement? (<b>Research question seven of the thesis</b>)</p>  |

- *H2(a): There is a positive and direct relationship between emotional intelligence (i.e., and its subscales) and civic virtue*
- *H2(b): There is a positive and direct relationship between emotional intelligence (i.e., and its subscales) and sportsmanship*
- *H2(c): There is a positive and direct relationship between emotional intelligence (i.e., and its subscales) and work engagement*

3. What is the relationship between implicit theories, organisational citizenship behaviour subscales and work engagement? (**Research question eight of the thesis**)

- *H3(a): There is a positive and direct relationship between implicit theories (i.e., intelligence, personality and emotion) and civic virtue*
- *H3(b): There is a positive and direct relationship between implicit theories (i.e., intelligence, personality and emotion) and sportsmanship*
- *H3(c): There is a positive and direct relationship between implicit theories (i.e., intelligence, personality and emotion) and work engagement*

4. Does emotional intelligence mediate the relationship between implicit theories of intelligence and study outcomes (i.e., organisational citizenship behaviour subscales and work engagement)? (**Research question nine of the thesis**)

- *H4(a): Emotional Intelligence mediates the relationship between implicit theories of intelligence and civic virtue*
- *H4(b): Emotional Intelligence mediates the relationship between implicit theories of intelligence and sportsmanship*
- *H4(c): Emotional Intelligence mediates the relationship between implicit theories of intelligence and work engagement*

5. Does emotional intelligence mediate the relationship between implicit theories of emotion and study outcomes (i.e., organisational citizenship behaviour subscales and work engagement)? (**Research question ten of the thesis**)

- *H5(a): Emotional Intelligence mediates the relationship between implicit theories of emotion and civic virtue*
- *H5(b): Emotional Intelligence mediates the relationship between implicit theories of emotion and sportsmanship*

- *H5(c): Emotional Intelligence mediates the relationship between implicit theories of emotion and work engagement*

6. Does emotional intelligence moderate the relationship between implicit theories (i.e., implicit theories of personality) and study outcomes (i.e., organisational citizenship behaviour subscales and work engagement?) (**Research question eleven of the thesis**)

- *H6(a): Emotional Intelligence moderates the relationship between implicit theories of personality and civic virtue*
- *H6(b): Emotional Intelligence moderates the relationship between implicit theories of personality and sportsmanship*
- *H6(c): Emotional Intelligence moderates the relationship between implicit theories of personality and work engagement*

This chapter is structured as follows. Section 9.2. provides a brief background of the present study. Section 9.3. provides the methodology of the study. Previous chapters and studies (e.g., Chapter 4 and Chapter 8) provide the detailed methodology used in this thesis. Therefore, Section 9.3. will briefly explain the methods, including the sample and data analysis strategies employed in the present study. Section 9.4. presents data analysis strategies and techniques. Section 9.5. presents the findings of the study. Correlation and Hierarchical Multiple Regression Analysis (HMRA) results will be presented first, followed by the mediation and moderation analysis findings. Section 9.6 discusses the results of this study. The implications, limitations and considerations for future studies will be provided in this section. Section 9.7. will present the chapter summary.

## 9.2. Study Background

Emotional intelligence (EI) and implicit theories (or mindsets) are considered essential psychological constructs in educational settings (Mortiboys, 2013; Romero et al., 2014; Vesely et al., 2013; Yeager & Dweck, 2012). This study adopted Salovey and Mayer's (1990) conceptualisation of EI. These theorists understand EI as a form of intelligence. According to them, EI is concerned with effective reasoning about emotions (Salovey & Mayer, 1990). More specifically, EI is defined as an ability to understand, manage and use emotions effectively (Salovey & Mayer, 1990). Due to the emotional nature of the teaching practice, teachers and PSTs could benefit from this concept. Indeed, emotionally intelligent teachers exhibit prosocial behaviours and perform their teaching duties in a way that empowers and instils intrinsic motivation in learners (Hen & Sharabi-Nov, 2014).

Implicit theories are defined as beliefs about the malleability of personal attributes (Yeager & Dweck, 2012). Mindsets are relevant in educational settings and have been shown to contribute to favourable behavioural outcomes such as academic achievement and well-adjusted behaviour (King et al., 2012; Romero et al., 2014; Shih, 2011). However, implicit theories are domain-specific, implying that individuals can hold different implicit theories about different personal attributes (Dweck, 2012). This study focuses on implicit theories of intelligence (i.e., beliefs about the malleability of intelligence), personality (i.e. beliefs about the malleability of personality traits) and emotion (i.e. beliefs about the malleability of emotions) as they are deemed essential in educational contexts.

Although research on EI and mindsets have mainly been independently pursued, their contributions in the education field and as positive psychology constructs suggest that they could be employed in a complementary manner. To the researcher's knowledge, only one study

has investigated the association between EI and implicit theories of emotion (e.g., Cabello and Fernández-Berrocal, 2015). Results of this study revealed that implicit theories of emotion positively affect ability EI. These results indicate that individuals who believe emotions are malleable tend to be able to understand and manage emotions. However, the domain specificity of implicit theories denotes that EI can be highly related to emotion-related and intelligence-related implicit theories. To this effect, it is conceivable to expect implicit theories of intelligence and emotion to be more related or to positively predict EI ability more than implicit theories of personality.

Research on EI in non-education contexts is extensive, with a limited understanding of the association between EI and different attitudes and behavioural outcomes in educational settings. Organisational citizenship behaviour (OCB) and work engagement are positioned as vital positive behaviours in education. OCB was defined by Organ (1988) as discretionary behaviours that go beyond the specified in-role requirements. Organ (1988) asserts that OCB is best presented by four dimensions (i.e., altruism, conscientiousness, courtesy, civic virtue and sportsmanship). The present study only focused on sportsmanship (i.e., willingness to tolerate all work inconveniences without complaining) and civic virtue (i.e., employee behaviour that indicates involvement in the functions of the organisation) (Organ, 1988; Podsakoff et al., 1990).

Work engagement is characterised by involvement, absorption, passion and strong, focused effort and energy on work (Bakker & Schaufeli, 2015). Research evidence reveals positive associations between EI and these variables (Cohen & Abedallah, 2015; D'Amico et al., 2020; De Clercq et al., 2014; Mérida-López et al., 2020; Vandewaa & Turnipseed, 2012). Most interestingly, research indicates that some EI dimensions are more related to OCB and work engagement. For example, Cohen and Abedallah (2015) found that only the 'regulation

of emotion' dimension was associated with OCB. On a similar note, D'Amico et al. (2020) reported that the 'use of emotion' dimension was strongly related to work engagement.

Furthermore, despite little research linking implicit theories with work-related attitudes and behaviours (e.g., OCB and work engagement), the positive effect of a growth mindset on these variables is plausible. Scant research in this area confirmed a positive relationship between an incremental theory, work engagement and citizenship behaviours (Özduran & Tanova, 2017; Zeng et al., 2019). In the present study, the researcher argues that mindsets can also indirectly influence positive behaviours via an underlying mechanism of EI. The mediating role of EI in the relationship between implicit theories and positive behaviours has not been explored. However, some studies demonstrate that EI is a significant mediating variable. Schutte and Malouff (2011) reported that EI mediates the relationship between mindfulness and subjective well-being. On the same note, Wang and Kong (2014) revealed that EI mediates the relationship between mindfulness and life satisfaction. Theoretically speaking, as implicit theories are more related to the variables of the same domain, implicit theories of intelligence and emotion may influence EI abilities which may, in turn, affect positive outcomes in the form of citizenship behaviours and work engagement.

The moderating role of EI is also not far-fetched. Research indicates that a fixed mindset is associated with adverse outcomes such as negative emotions and maladaptive behaviour (Li et al., 2019; Tamir et al., 2007; Yeager et al., 2013). As a positive construct, EI is likely to buffer the negative effects of a fixed mindset. This relationship is not inconceivable, given that the moderating role of EI is confirmed in prior research. For example, Naseem (2018) found that EI plays a moderating role in the relationship between job stress and employee life satisfaction. Similarly, Yozgat et al. (2013) revealed that EI moderated the relationship between job stress and job performance. Moreover, EI has been found to



strengthen associations between positive constructs. In their study, Mahon et al. (2014) found that EI strengthened the positive relationship between perceived organisational support and engagement. Consequently, it is expected that EI will buffer the impact of fixed mindsets whilst amplifying the positive associations between a growth mindset and study outcomes.

It is apparent that previous research is mostly correlational. Data included in this study is longitudinal, consisting of four-time points. Undoubtedly, longitudinal data enables the researcher to explicate causal associations between the study variables (Frees, 2004). Therefore, this study contributes to knowledge by seeking to investigate the causal associations between EI, implicit theories, OCB, and work engagement. It also aims to extend the understanding of the link among these variables in the education context.

### **9.3. Methodology**

#### **9.3.1. Participants, Procedures and Measures**

Participants included 86 PSTs who completed a brief Growth Mindset and Emotional Intelligence (GMEI) training programme. Details of this intervention are presented in Chapter 6 and the previous study (i.e., Study 4/Chapter 8). The same procedures, study variables (i.e., emotional intelligence, implicit theories of intelligence, implicit theories of personality, implicit theories of emotion, civic virtue, sportsmanship and work engagement) and measures detailed in Study 4 were used in this study. The intervention group was measured at four-time points, i.e., Time 1 (four weeks before the intervention), Time 2 (immediately before the intervention), Time 3 (immediately after the intervention) and Time 4 (follow-up- four weeks after the intervention).

#### **9.4. Data analysis**

This study aimed to investigate the direct and indirect relationships between the study variables. A Structural Equation Modelling (SEM) is the most appropriate analysis given these objectives. SEM allows researchers to simultaneously test the relationships between variables while accounting for measurement errors (Hair et al., 1998). However, alternative statistical analyses were used due to the small sample size. As a rule of thumb, the minimum sample size required for an SEM is 200 (Kline, 2011). To this effect, correlation and a series of hierarchical multiple regression analyses were employed to determine the associations between the study variables. Correlation is the most appropriate statistical analysis to determine the relationships between variables (Field, 2009). Two types of correlation coefficients exist, i.e., Pearson product-moment correlation coefficient and Spearman's correlation coefficient.

The Pearson correlation is a parametric statistic that measures the linear relationship, whereas Spearman's correlation is a non-parametric statistic that evaluates the monotonic association between variables (Field, 2009). Spearman's correlation "works by first ranking the data and then applying Pearson's equation" (Field, 2009, p. 180). One of the essential assumptions of a Pearson correlation is the normality of data (Field, 2009). In this study, data for all variables deviated from normality, as was observed in the Normal Q-Q Plots. Thus, Spearman's correlation was used. Cohen's (1988) effect sizes were used where values of  $\pm 0.1$  represent a small effect,  $\pm 0.3$  medium and  $\pm 0.5$  represent a large effect. Data from the intervention group at Time 1 (pre-intervention) and Time 4 (follow-up) was used to test the correlations between the study variables.

Moreover, it is noteworthy to mention that correlations, however, do not imply causation (Field, 2009). To establish causality, researchers must be mindful of spuriousness

and ensure that the feature of time order is satisfied where the cause comes before the effect (Chambliss & Schutt, 2006). As a result, after associations were established through a correlation, a series of hierarchical multiple regression analyses (HMRA) were performed to further examine the relationship between the study variables (Field, 2009). The main aim was to investigate whether the independent variables (i.e., at Time 3- post-intervention) predict the dependent variables at Time 4 during follow-up after controlling for the variables at Time 2 (i.e., pre-test). Individual original levels or pre-test scores may affect the outcomes and therefore needs to be controlled for in the analysis. Reliable measures are stable, meaning that pre-test scores (i.e., Time 1 and Time 2) are expected to produce similar results with some variability (Aldridge et al., 2017). Thus, scores at Time 2 represent participants' original level of variables and hence were controlled for in the regression analysis.

In this study, the predictor variables include emotional intelligence and its subscales and implicit theories at Time 3, whereas the outcome variables include emotional intelligence (i.e., and its subscales), OCB-subcales (i.e., civic virtue and sportsmanship) and work engagement at Time 4. The researcher hypothesised that EI and its subscales are both the predictor of study outcomes (i.e., civic virtue, sportsmanship and work engagement) and an outcome of implicit theories (i.e., implicit theories of intelligence and implicit theories of emotion).

Prior to the HMRA, a set of assumptions was tested. This included outliers, multicollinearity, normally distributed errors, linearity, homoscedasticity and independence of residuals (Field, 2009; Pallant, 2007). Outliers or extreme scores were detected with a means of boxplots and standardised residual values. Tabachnick and Fidell (2007) understand outliers as those with standardised residual values above 3.3 or less than -3.3. Boxplots showed no outliers for all the variables, except data for sportsmanship at Time 4. However, upon close

examination of the standardised residual values, no extreme scores were detected as there were no values above 3.3 or less than -3.3. Multicollinearity refers to the correlation among independent variables (Field, 2009). The findings showed no issues of multicollinearity with no highly correlated ( $r = .9$  and above) IVs. The independence of the residuals assumption is that errors of prediction are independent of one another (Field, 2009). This was tested using the Durbin-Watson statistic, which measures the autocorrelation of errors (Tabachnick & Fidell, 2007). According to Field (2009), the Durbin-Watson value must be around the value of 2 for this assumption to hold. This assumption was met in all the models in this study as the values were not significantly different from 2.

Normality of data, linearity, and homoscedasticity was tested using the residual scatterplots as Tabachnick & Fidell (2007) suggested. Residuals are defined as the differences between the observed and the predicted dependent variable scores (Tabachnick & Fidell, 2007). The assumption of normality in a regression model is that the errors of prediction are normally distributed around each predicted dependent variable score (Field, 2009). Linearity refers to a straight-line relationship between residuals and predicted dependent variable scores (Pallant, 2007). The assumption of homoscedasticity is the assumption that “the variance of the residuals about predicted dependent variable scores is equal for all predicted scores” (Pallant, 2007, p.149).

For these assumptions to hold, data points in the Normal P-P Plots should lie in a reasonably straight line (Pallant, 2007). In the residuals plots, data points should be roughly rectangularly distributed, with a concentration of scores in the centre (Tabachnick & Fidell, 2007). All the Normal P-P Plots and the residuals scatterplots met these assumptions, except the one with sportsmanship\_Time 4 as a dependent variable, which showed a slight deviation to normality and linearity. Given that assumptions were violated for one dependent variable, a

decision was made to proceed with the analysis. It is noteworthy to mention that when assumptions of regression are not met, our findings can be biased and, therefore, not generalisable (Field, 2009). Nevertheless, failure to meet these assumptions does not necessarily invalidate the analysis (Tabachnick & Fidell, 2007). In fact, we can draw conclusions about the study sample, even if assumptions are violated (Field, 2009).

In addition to a correlation and hierarchical multiple regression analysis, mediation and moderation analyses were run to test the mechanisms in which the study variables are associated. The contemporary Preacher and Hayes' (2008) bootstrapping procedure was employed to test for mediation and moderation effects. Bootstrapping involves re-sampling, whereby random samples are drawn from the original sample to produce robust estimates of the statistic of interest (Cohen & Abedallah, 2015). This method provides confidence intervals that can be used to determine the significance or non-significance of a mediation effect (Cohen & Abedallah, 2015; Hayes, 2009). The interaction effect is significant if zero is not between the upper and the lower bound (Hayes, 2009).

Preacher and Hayes (2008) argue that the three criteria must be met for mediation analysis. This includes a significant correlation between an independent variable and a mediator; a significant relationship between the mediator and the dependent variable after controlling for the effect of the independent variable on the mediator; a significant indirect effect of the independent variable on the dependent variable. Data at Time 4 was used for this analysis. The correlation results (see Table 9.1 below) shows that the first two criteria were fairly met, where EI (i.e., mediator) is correlated with the independent variable (i.e., ITE) and dependent variables (i.e., civic virtue, sportsmanship and work engagement). However, EI was not correlated with ITI. A decision was made to proceed with the analysis, considering the robust nature of the Bootstrapping method. Unlike Baron and Kenny's (1986) causal mediation

approach, bias-corrected bootstrapping is robust and said to be able to detect indirect effects regardless of the presence of significant total or direct effects (Mackinnon et al., 2004). The third criteria is determined in the presented results.

It was hypothesised that EI mediates the relationship between implicit theories of intelligence and study outcomes (i.e., civic virtue, sportsmanship and work engagement) and between implicit theories of emotion and study outcomes. It was also hypothesised that EI moderates the relationship between implicit theories of personality and study outcomes.

## **9.5. Results**

Spearman's rank correlation and hierarchical multiple regression analysis (HMRA) results are presented initially in accordance with the research questions. Mediation and moderation analysis findings will follow.

### **9.5.1. Correlation and HMRA Results**

Cohen's (1988) effect sizes were used where values of  $\pm.1$  represent a small effect,  $\pm.3$  medium and  $\pm.5$  a large effect. All implicit theories (i.e., intelligence, personality, and emotion) at Time 3 did not correlate with total EI at Time 4. However, associations were observed between some implicit theories and EI subscales. Both ITI\_Time3 ( $r_s = .29, p < .01$ ) and ITE\_Time3 ( $r_s = .38, p < .01$ ) positively correlated with the regulations of emotions EI subscale at Time 4. Furthermore, total EI at Time 3 only correlated with one outcome (i.e., work engagement). There was a small, positive relationship between total EI\_Time3 and work engagement at Time 4 ( $r_s = .22, p < .05$ ). This positive association was also observed in one of the EI subscales. Results demonstrated a positive, medium relationship between the use of emotions EI subscale at Time 3 and work engagement at Time 4 ( $r_s = .32, p < .01$ ).

Moreover, the study explored the relationship between implicit theories and study outcomes. Only implicit theories of intelligence at Time 3 demonstrated a small association with civic virtue at Time 4. Nevertheless, this relationship was in an unexpected direction ( $r_s = -.23, p < .05$ ).

**Table 9.1.***Intercorrelations between study variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
ITI_T3	1																	
ITP_T3	.68**	1																
ITE_T3	.40**	.22*	1															
EI_T3	.08	.05	.07	1														
SEA_T3	.10	.08	.10	.70**	1													
OEA_T3	-.00	-.14	-.01	.65**	.40**	1												
UOE_T3	-.01	-.05	-.04	.50**	.25*	.06	1											
ROE_T3	.03	-.00	.05	.69**	.38*	.28*	.24*	1										
EI_T4	.16	.13	.21	.32**	.28*	.18	.28**	.14	1									
SEA_T4	.04	.04	.02	.26*	.37**	.19	.21	.06	.73**	1								
OEA_T4	.03	.09	.06	.31**	.25*	.35**	.02	.16	.66**	.51**	1							
UOE_T4	.12	.08	.03	.22*	.22*	.06	.56**	.00	.61**	.32**	.15	1						
ROE_T4	.29**	.19	.38**	.30**	.17	.12	.09	.35**	.69**	.37**	.31**	.23*	1					
ITI_T4	.58**	.38**	.18	.11	.13	.00	.02	.20	.09	.07	.12	.00	.17	1				
ITP_T4	.55**	.46**	.13	.10	.13	-.01	.05	.22*	.01	-.04	.03	.02	.09	.80**	1			
ITE_T4	.44**	.36**	.24**	.22*	.23*	.09	-.03	.20	.34**	.21	.24*	.11	.28**	.44**	.46**	1		
CV_T4	-.23*	-.07	-.02	.02	.05	.05	.03	-.18	.31**	.28**	.14	.25*	.24*	-.44**	-.33**	-.07	1	
SM_T4	.12	.02	.11	.13	.10	.03	.09	.13	.33**	.15	.26*	.28*	.26*	.22*	.18	.37**	.03	1
WE_T4	-.01	-.06	.07	.22*	.16	.14	.32**	-.03	.36**	.35**	.17	.27*	.25*	-.19	-.10	.15	.20	.04

Note: \*\* Correlation is significant at the 0.01 level, \*. Correlation is significant at the 0.05 level). EI= Emotional Intelligence; ITI= Implicit Theories of Intelligence; ITP = Implicit Theories of Personality; ITE= Implicit Theories of Emotion; SEA= Self-Emotional Appraisal; OEA= Other's Emotional Appraisal; ROE= Regulation of Emotion; UOE= Use of Emotion; CV= Civic Virtue; SM= Sportsmanship; WE= Work Engagement



### **9.5.1.1. *Implicit theories (i.e., intelligence, personality and emotion) as predictors of emotional intelligence (i.e., and its subscales)***

An HMRA was performed to further explore the direct relationship between implicit theories and EI. This analysis aimed to test the ability of implicit theories (i.e. ITI, ITP and ITE) at Time 3 to predict emotional intelligence (i.e. and its subscales) at Time 4 after controlling for EI, ITI, ITP and ITE at Time 2. Results revealed that the model was non-significant, indicating that implicit theories at Time 3 did not predict emotional intelligence at Time 4,  $F(7, 75) = 1.19, p = .32$ .

A series of HMRA were run to investigate whether implicit theories (i.e. ITI, ITP and ITE) at Time 3 predict emotional intelligence subscales (i.e. SEA, OEA, UOE and ROE) at Time 4 after controlling for the variables at Time 2. Results demonstrated that implicit theories at Time 3 did not predict SEA\_Time4 [ $F(7, 75) = .54, p = .80$ ]; OEA\_Time4 [ $F(7, 74) = 1.56, p = .16$ ] and UOE\_Time4 [ $F(7, 73) = 1.03, p = .42$ ]. However, findings revealed that implicit theories at Time 3 significantly predicted ROE\_Time4. In this model, ROE, ITI, ITP and ITE at Time 2 were entered at Step 1, explaining 17.9% of the variance in ROE\_Time4. After entry of ITI\_Time3, ITP\_Time3 and ITE\_Time3, the total variance explained by the model as a whole was 25%,  $F(7, 74) = 3.53, p = .00$ . ITI\_Time3, ITP\_Time3 and ITE\_Time3 explained an additional 7% of the variance in ROE\_Time4 after controlling for ITI\_Time2, ITP\_Time2, ITE\_Time2 and ROE\_Time2, R square change = .07,  $F$  change (3, 74) = 2.34,  $p = .08$ . In the final model, only ROE\_Time2 ( $\beta = .27, p = .02$ ) and ITE\_Time3 ( $\beta = .28, p = .02$ ) were statistically significant. Therefore, of particular interest, implicit theories of emotion at Time 3 significantly predicted the regulation of emotion EI subscale at Time 4.

### **9.5.1.2. *Emotional intelligence (i.e., and its subscales) as a predictor of organisational citizenship behaviour (i.e., civic virtue and sportsmanship) and work engagement.***

This analysis investigates the direct relationship between emotional intelligence and study outcomes. A series of HRM models were run. Results demonstrated that total EI\_Time3 did not

predict civic virtue [ $F(3, 78) = .60, p = .62$ ], sportsmanship [ $F(3, 79) = 1.51, p = .22$ ] and work engagement [ $F(3, 76) = 2.21, p = .09$ ] at Time 4.

An HRM model was also run to test the ability of the EI subscales at Time 3 to predict the study outcomes. Results demonstrated that EI dimensions at Time 3 did not predict civic virtue [ $F(9, 67) = .58, p = .81$ ], sportsmanship [ $F(9, 67) = .79, p = .63$ ] and work engagement [ $F(9, 67) = 1.89, p = .07$ ] at Time 4. Nevertheless, although the overall model was non-significant for work engagement, results indicated that the use of emotion EI subscale was a significant predictor of work engagement at Time 4 ( $\beta = .34, p = .01$ ).

### **9.5.1.3. *Implicit theories as predictors of organisational citizenship behaviour (i.e., civic virtue and sportsmanship) and work engagement***

A series of HMR analyses were performed to test the ability of implicit theories at Time 3 to predict study outcomes (i.e., civic virtue, sportsmanship and work engagement) at Time 4 after controlling for the variables at Time 2. The first model investigated whether implicit theories (ITI\_Time3, ITP\_Time3, ITE\_Time3) predict civic virtue at Time 4, after controlling for civic virtue, implicit theories of intelligence, implicit theories of personality and implicit theories of emotion at Time 2. The overall model was non-significant, indicating that implicit theories at Time 3 did not predict civic virtue at Time 4 [ $F(7, 75) = 1.58, p = .16$ ]. However, findings showed that ITI\_Time3 ( $\beta = -.36, p = .05$ ) and ITP\_Time2 ( $\beta = .33, p = .04$ ) are significant predictors of civic virtue at Time 4. In addition, results demonstrated that implicit theories at Time 3 did not predict sportsmanship [ $F(7, 76) = .55, p = .80$ ] and work engagement [ $F(7, 73) = .74, p = .64$ ] at Time 4.

These findings show that the direct relationship between implicit theories and positive outcomes such as organisational citizenship behaviours and work engagement is inconclusive and therefore needs further investigation. The following section explores the indirect effects of implicit theories on study outcomes.

### 9.5.2. Mediation Analysis Results

Theoretically speaking, the relationship between ability emotional intelligence and implicit theories of intelligence and emotion is plausible. Although this study did not confirm the association between EI and implicit theories of intelligence, the positive association between the EI subscale (i.e., regulation of emotions) and implicit theories of emotion was vivid. The relationship between implicit theories and outcomes (i.e., organisational citizenship behaviours and work engagement) is questionable. Nevertheless, this does not preclude the possibility of other interactions. To this effect, it is hypothesised that implicit theories (i.e., intelligence and emotion) influence these study outcomes via a mechanism of emotional intelligence. A series of mediation analyses were performed to investigate this speculation. For this analysis, data at Time 4 (i.e., follow-up) was used, and the data at Time 2 (i.e., pre-intervention) remained covariates. Data at Time 4 (i.e., follow-up) was used to conduct this analysis because it enabled the examination of the relationship between variables post-intervention. It is likely that the effects of an intervention are most observed during the follow-up phase, where variables are enhanced or cultivated. The interaction of variables would therefore indicate the effectiveness of an intervention in fostering the variables of interest.

The initial series of mediation analyses tested the mediating role of EI in the relationship between implicit theories of intelligence and study outcomes. Results showed that the indirect effect of implicit theories of intelligence on civic virtue via emotional intelligence was non-significant,  $b = .02$ , 95% BCa CI [-.02, .06]. Thus, EI does not mediate the relationship between implicit theories of intelligence and civic virtue. The indirect effect of implicit theories of intelligence on sportsmanship via emotional intelligence was also non-significant,  $b = .02$ , 95% BCa CI [-.01, .06], indicating that EI does not mediate the relationship between implicit theories of intelligence and sportsmanship. To add, findings showed that EI does not mediate the relationship between implicit theories of intelligence and work engagement,  $b = .03$ , 95% BCa CI [-.02, .09].

Mediation analyses were also run to investigate the mediating role of EI in the relationship between implicit theories of emotion and study outcomes. Interestingly, results demonstrated that the indirect effect of implicit theories of emotion on civic virtue through emotional intelligence was

significant,  $b = .09$ , 95% BCa CI [.03, .17]. The standardised coefficient of this indirect effect is  $\beta = .14$ , 95% BCa CI [.05, .26]. Therefore, EI mediates the relationship between implicit theories of emotion and civic virtue. Results also showed that EI mediates the relationship between implicit theories of emotion and work engagement,  $b = .11$ , 95% BCa CI [.02, .22]. The standardised coefficient of this indirect effect is  $\beta = .12$ , 95% BCa CI [.03, .23]. Nevertheless, the indirect effect of implicit theories of emotion on sportsmanship via emotional intelligence was non-significant,  $b = .05$ , 95% BCa CI [-.01, .11]. Thus, EI does not mediate the relationship between implicit theories of emotion and sportsmanship.

The following section presents the findings from a moderation analysis.

### **9.5.3. Moderation Analysis Results**

Due to the domain specificity of implicit theories, which implies that individuals can hold different mindsets on different attributes, and also argues that implicit theories will be more associated with attributes of the same domain, the relationship between EI and implicit theories of personality is inconceivable (Dweck, 2017). Indeed, the present study confirmed a non-existent connection between these variables. To this end, a different interaction is assumed. It is predicted that emotional EI will moderate the relationship between implicit theories of personality and study outcomes.

Results demonstrated that emotional intelligence does not moderate the relationship between implicit theories of personality and study outcomes i.e., civic virtue ( $b = .12$ , 95% CI [-.12, .35],  $t = .99$ ,  $p = .33$ ); sportsmanship ( $b = -.22$ , 95% CI [-.52, .08],  $t = -1.45$ ,  $p = .15$ ) and work engagement ( $b = .20$ , 95% CI [-.14, .54],  $t = 1.19$ ,  $p = .24$ ).

## 9.6. Discussion and Further Research

This investigation aimed to decipher direct and indirect relationships between implicit theories (i.e., intelligence, personality, and emotion), EI, organisational citizenship behaviours (i.e., civic virtue and sportsmanship) and work engagement. To fulfil this aim, five research questions guided this inquiry. The first question of this study relates to the direct relationship between implicit theories and EI. Guided by theory and previous research, it was hypothesised that the direct relationship between EI and specific implicit theories (i.e. intelligence and emotion) would be positive. It was also hypothesised that EI would not be associated with implicit theories of personality. Unexpectedly, implicit theories of intelligence were not directly related to EI and its subscales; as such, *H1(a)* was rejected. Salovey and Mayer (1990) understood EI as a type of intelligence. According to their model, EI involves reasoning about emotions and effectively managing emotions (Mayer et al., 2008). Given that EI is conceptualised as an ability under the broader intelligence domain, it was anticipated that the belief that intelligence is susceptible to improvement is likely to influence EI abilities. Nonetheless, a non-significant relationship observed in this study strongly signals an absence of a causal link between these variables.

Furthermore, the relationship between EI and implicit theories of personality was also non-significant, which confirmed *H1(b)*. These findings are aligned with the theoretical perspectives of mindsets. Dweck et al. (1995) contend that mindsets are domain-specific, meaning that individuals tend to hold different beliefs about different attributes. In this argument, the pioneers of the theory assert that implicit theories are distinct and relate more to attributes of the same domain (Dweck et al., 1995). Deducing from the conceptions of ability EI, it can be argued that theoretically, EI falls within the emotion and ability domains. According to Caruso et al. (2002), ability EI should not be considered as a constellation of personality traits, instead, it should be viewed as a mental ability, independent of personality dimensions. Consequently, the findings of this study are theoretically sound.

As anticipated, implicit theories of emotion were positively related to the EI subscale, i.e., regulation of emotion, which partially verified *H1(c)*. Regression analysis results showed that ITE at

Time 3 (i.e., post-intervention) predicts the regulation of emotion dimension of EI at Time 4 (i.e. follow-up). This means that individuals who espouse a belief that emotions are malleable tend to show an ability to regulate their emotions efficiently. These individuals are likely to be open to different effective emotion management strategies and may persist during challenging times. The findings of this study are consistent with a study conducted by Cabello and Fernández-Berrocal (2015) which demonstrated that implicit theories of emotion are a significant predictor of EI. A review of the literature corroborates these results. Several studies indicate that implicit theories of emotion are related to emotion regulation, a concept closely related to EI (Tamir et al., 2007). For example, De Castella et al. (2013) investigated a relationship between beliefs about emotions and emotion regulation strategies. This study concluded that a belief that emotions are malleable predisposes individuals to employ effective emotion regulation strategies such as cognitive reappraisal (De Castella et al., 2013). Similarly, Schroder et al. (2015) confirmed a positive relationship between implicit theories of emotion and effective emotion regulation strategies, which has significant positive health implications. Consequently, these findings support the notion that an intervention teaching and promoting a growth mindset of personal attributes such as emotions is likely to enable the effective use of emotions and effective emotion management strategies.

The second research question addressed by this study relates to the direct relationship between EI, organisational citizenship behaviours (i.e., civic virtue and sportsmanship) and work engagement. It was hypothesised that EI (i.e., and its subscales) would positively relate to both civic virtue (i.e., *H2a*) and sportsmanship (i.e., *H2b*). Results of this study demonstrated a non-significant direct relationship between these variables, and thus, both hypotheses were rejected. It was expected that high EI is related to positive behaviours such as being involved in activities that promote positive functioning whilst maintaining a positive attitude and tolerating inconveniences. Several reasons explain why this relationship is conceivable. As detailed in Chapter 2, individuals high in EI are more likely to be emotionally attuned and are likely to respond according to other people's emotional needs (Abrahams, 1991; Turnipseed & Vandewaa, 2012). In addition, with their empathetic understanding, they tend to be loyal, leading to positive collaboration and teamwork (Cohen & Abedallah, 2016;

Yadav & Punia, 2016). Thus, the findings of this study are not in line with the bulk of existing research studies, which demonstrate a positive relationship between EI and OCB (Carmeli & Josman, 2006; Cohen & Abedallah, 2014; Florescu & Nastase, 2014).

Moreover, although the direct relationship between total EI and work engagement was non-significant, only the *use of emotion* EI subscale significantly predicted work engagement, which partially confirmed *H2(c)*. Individuals high in EI are most likely to use their emotions in adaptive ways to achieve their personal goals. Indeed, effectively using emotions to facilitate thought is associated with a positive state of mind (Salovey & Mayer, 1990). The findings of this study corroborate prior research. De Clercq et al. (2014) found a positive relationship between EI and work engagement. Similarly, D' Amico et al. (2020) confirmed a strong relationship between the use of emotion subscale and work engagement dimensions. They concluded that individuals high in EI are likely to use their emotions positively, leading to increased engagement and satisfaction (D'Amico et al., 2020). Moreover, the positive association between EI and work engagement is confirmed in several other empirical studies (e.g., Mérida-López et al., 2017; Yan et al., 2018; Zhu et al., 2015).

The third research question relates to the relationship between implicit theories and study outcomes. It was hypothesised that there would be a direct, positive relationship between implicit theories (i.e., intelligence, personality, emotion) and study outcomes, i.e. civic virtue, sportsmanship and work engagement. The findings of this study revealed no significant direct relationship between implicit theories and both sportsmanship and work engagement, and thus, both *H3(b)* and *H3(c)* were rejected. Interestingly, results showed a rather adverse association between implicit theories and civic virtue, rejecting *H3(a)*. Findings demonstrated that implicit theories of intelligence at Time 3 negatively predicted civic virtue at Time 4, indicating that individuals with a growth mindset are less likely to engage in positive behaviours in the form of being active and involved in essential organisational functions. These results are counterintuitive and contradict prior research and theoretical assumptions. Although existing research is largely correlational, a handful of research shows a positive relationship between implicit theories and OCB. For example, Özduran and Tanova's (2017) study revealed a positive association between a growth mindset and some OCBs

such as altruism and conscientiousness. This scant research gives an indication that implicit theories may positively relate to some OCBs not explored in this study. Consequently, more research is needed to explicate this relationship.

Nevertheless, a negative relationship between implicit theories of intelligence and civic virtue may be suggestive of alternative explanations. This may perhaps speak to the notion of a '*false growth mindset*', which happens when individuals believe that they have a growth mindset when they do not (Dweck, 2015). Individuals with this false growth mindset tend to understand the growth mindset theory and its principles but may not apply this knowledge accordingly (Dweck, 2015). Therefore, these individuals may disregard the strategies and behaviours associated with a growth mindset. Furthermore, a non-significant direct relationship between implicit theories and work engagement also contradicts theory and research. For example, a study by Zeng et al. (2019) confirmed a positive relationship between implicit theories of intelligence and work engagement. It is said that individuals with a growth mindset are more concerned with self-development and therefore are most likely to exert effort, which is an indication of engagement (Keating & Helsin, 2015). On the other hand, individuals with a fixed mindset tend to avoid challenging tasks and avoid putting effort (Yeager & Dweck, 2012). It could be argued that the non-significant findings found in this study may be due to the small sample size. However, perhaps a long-term follow-up is needed to examine the substantial influence of EI and implicit theories on study outcomes (i.e., especially OCBs). These findings indicate that whilst these variables are correlated, a causal link may be difficult to determine.

The fourth, fifth and sixth research questions explored the indirect associations between the study variables. It was predicted that EI would mediate the relationship between implicit theories of intelligence and study outcomes. The findings of the study were non-significant for all the study outcomes. Thus, it was found that EI does not mediate the relationship between implicit theories of intelligence and the outcomes of this study. It was also predicted that EI would mediate the relationship between implicit theories of emotion and study variables. Results revealed that EI only mediates the relationship between implicit theories of emotion and two study outcomes (i.e., civic virtue and work engagement), confirming *H5(a)* and *H5(c)*. The findings of the study revealed no



moderating role of EI in the relationship between implicit theories of personality and study outcomes, disconfirming the hypotheses in research question six. These results were not expected, considering the prominent role of EI in enhancing positive relationships between positive variables and buffering the effects of adverse outcomes (Mahon et al., 2014; Naseem, 2018; Yozgat et al., 2013).

Of particular interest is the finding that indicates that implicit theories of emotion influence outcomes (i.e., civic virtue and work engagement) via EI abilities. These are compelling findings and warrant further explanation. Implicit theories of emotion are understood as beliefs about the malleability of emotion (Tamir et al., 2007). Individuals with a growth mindset believe that emotions are malleable and can be effectively controlled, whereas those with a fixed mindset believe that emotions are uncontrollable (Tamir et al., 2007). A growth mindset of emotions is most likely to affect how individuals manage and control their emotions (Cabello & Fernández-Berrocal, 2015). With this mindset, individuals are expected to be open to different effective emotion management strategies, further enhancing their EI abilities (De Castella et al., 2013). It is plausible that this association results in positive consequences. It is firmly established that high EI results in positive behaviours and a positive state of mind (De Clercq et al., 2014; Extremera et al., 2018; Mérida-López et al., 2017). To this effect, these findings indicating that implicit theories of emotion indirectly affect civic virtue and work engagement via a mechanism of EI are perfectly sensible. In fact, the role of EI as a mediator between positive variables is not new and has been confirmed in prior research. For example, Schutte and Malouff (2011) found that EI mediates the relationship between mindfulness and subjective well-being. Similarly, Wang and Kong (2014) revealed that EI mediates the relationship between mindfulness and life satisfaction.

Furthermore, these findings can also be explained by the elements of the Broaden and Build theory of positive emotions explained in Chapter 2 (Fredrickson, 1998). This theory maintains that positive emotions broaden thought-action tendencies (Fredrickson, 2001). Generally, positive emotions influence cognitive changes that result in creative, positive responses (Conway et al., 2013; Frederickson, 1998; Frederickson & Cohen, 2008). This is achieved through enhancing attention, problem-solving orientation and social cognition, which entails a good understanding of others

(Conway et al., 2013). Drawing from the findings of this study, it can be argued that a growth mindset of emotion advances the experience of positive emotions, which broadens individuals' thought processes by enhancing EI abilities. This notion is substantiated by literature. Research posits that a growth mindset of emotions is associated with positive emotions and positive outcomes such as well-being (King & dela Rosa, 2019; Tamir et al., 2007). A belief that emotions are malleable may open a repertoire of capabilities that may enable individuals to understand others and their emotions and use effective emotion management strategies.

This theory also argues that an experience of positive emotions leads to long-term psychological, physical and social resources (Conway et al., 2013; Frederickson & Cohn, 2008; Fredrickson, 2001; 2004). Undisputably, EI is a significant personal resource that culminates in positive experiences, whilst mitigating the effects of adverse consequences (Brunetto et al., 2012, Fernández-Berrocal & Extremera, 2016; Mérida-López & Extremera, 2017; Sánchez-Álvarez et al., 2016). This phenomenon is evidenced in this study. The enduring personal resource in the form of EI contributes to positive outcomes such as civic virtue and work engagement. The accumulation of these outcomes is also beneficial to individuals. Research demonstrates that work engagement and citizenship behaviours are associated with adaptive outcomes such as well-being and high performance (Burke et al., 2009; Halbesleben, 2010; Harper, 2015). As a result, these outcomes contribute to the long-lasting experience of positive emotions.

Overall, the results of this study have essential theoretical contributions and practical implications. A review of the literature revealed that most studies are descriptive and correlational in nature. Therefore, this study extends the knowledge by uncovering causal relationships between these variables by using longitudinal data. In this study, the relationships between EI and implicit theories were demystified. Although EI did not correlate with implicit theories of intelligence as was hypothesised, results demonstrated that implicit theories of emotion are the significant predictor of EI abilities (i.e., regulation of emotion). It was noted from the literature and mindsets theory that implicit theories are domain-specific. Consequently, these findings contribute to knowledge by confirming a solid link between implicit theories of emotion and EI.

Moreover, although EI and its subscales did not significantly predict OCBs (i.e., civic virtue and sportsmanship), results confirmed the positive association between one EI dimension (i.e., use of emotion) and work engagement. Prior research often overlooks the role of EI abilities and most often reports the effects of total EI. Therefore, these results extend our knowledge by clarifying the crucial role of EI abilities in influencing outcomes. Furthermore, to the researchers' knowledge, this is the first study associating EI, implicit theories, organisational citizenship behaviours and work engagement in such an intriguing way. The findings of the study confirmed the significant role of EI in mediating the relationship between implicit theories of emotion and outcomes (i.e., civic virtue and work engagement). These results also underscore the importance of implicit theories of emotion in influencing EI abilities, translated to positive behaviours in the form of civic virtue and work engagement.

This study further confirms the Broad-and-Build theory of positive emotions by Fredrickson (1998). This theory posits that positive emotions result in cognitive changes that subsequently cause positive responses (Conway et al., 2013; Fredrickson, 1998; Fredrickson & Cohn, 2008). According to this theory, positive emotions also build long-term psychological, physical and social resources (Conway et al., 2013; Fredrickson & Cohn, 2008; Fredrickson, 2004). In this study, it was demonstrated that implicit theories of emotion predict one EI dimension (i.e., regulation of emotion). Research also shows that an incremental theory of emotion is associated with positive emotions (Tamir et al., 2007). Individuals who hold a belief that they can manage and control their emotions, tend to experience positive emotions. Therefore, based on the findings of this study, these positive emotions result in cognitive changes where individuals build and use the EI skills necessary to effectively understand and control their emotions. Moreover, as it is known, EI is a long-term personal resource. This further results in the accumulation of positive behaviours in the form of civic virtue and work engagement. Consequently, these findings contribute to the broader positive psychology framework.

Results found in this study could be useful for applied psychologists and practitioners working in the field of developing and implementing EI interventions. Results confirmed that implicit theories

of emotion are positively associated with EI abilities. Therefore, EI interventions could be coupled with a mindsets theory to strengthen the effectiveness of these programmes. It is conceivable that information about how emotions are amenable and susceptible to improvement can result in openness to applying EI abilities and effective emotion management strategies. Nevertheless, this study is not without its limitations and considerations for future research. The limitation of this study is a small sample size, which is associated with a low statistical power to detect significant effects (Button et al., 2013). Most hypotheses in this study were not supported, and this could be due to the small sample size. Furthermore, this also limited the kind of statistical analysis tests employed. The causal associations could have been analysed using robust analyses such as Structural Equation Modelling (SEM). However, the minimum sample size required for this analysis is 200 (Kline, 2011). Therefore, future studies should use larger sample sizes to increase the study's statistical power and enable robust statistical analyses.

Furthermore, the second study limitation is the variables explored. This study used only two dimensions of OCB (i.e., civic virtue and sportsmanship), which may provide a limited understanding of the relationships between variables. For instance, previous research revealed a positive relationship between implicit theories and OCBs, which were not included in this study (i.e., altruism and conscientiousness). Thus, future research studies should explore the multifaceted nature of OCB to illustrate these associations further. Lastly, the third limitation of measures has already been explored in Study 3. This includes the use of self-report measures and the use of some scales with questionable validity.

## **9.7. Chapter Summary**

This chapter presented the findings of Study 3, which investigated the direct and indirect relationships between study variables (i.e., EI, implicit theories, organisational citizenship behaviours, which only include civic virtue and sportsmanship and work engagement). Results of this study showed that implicit theories of emotion are positively and directly related to one of the EI subscales (i.e., regulation of emotion). Total EI was not shown to influence any of the study outcomes

directly. However, the findings indicated a direct relationship between the use of emotion EI subscale and work engagement. Interestingly, an adverse relationship was revealed between implicit theories of intelligence and civic virtue. Indirect associations showed that EI is a significant mediator in the relationship between implicit theories of emotion and two of the study outcomes (i.e., civic virtue and work engagement). There were no moderating effects of EI in the relationship between implicit theories of personality and study outcomes.

The next chapter provides an overview of the findings, implications, limitations and considerations for future research.

## CHAPTER 10: FINAL DISCUSSION, IMPLICATIONS, LIMITATIONS AND FUTURE RESEARCH

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### 10.1. Overview

This chapter provides an overview of findings in line with the thesis objectives outlined in Chapter 2. It will then discuss the theoretical, practical, and methodological implications of the results. The policy implications of the findings will also be presented. This will then be followed by a discussion of the limitations and suggestions for future research. Lastly, this chapter will conclude with a summary.

### 10.2. Summary of Findings by Research Objectives

An overview of findings will be outlined based on the thesis objectives.

#### 10.2.1. *Research Objective 1/ Study 1: To understand the impact of a pilot GMEI intervention on preservice teachers' EI, mindsets, organisational citizenship behaviour (OCB) and work engagement*

Emotional intelligence (EI) is considered an essential personal resource in the education context. This construct has been associated with a myriad of positive outcomes such as well-being, teacher self-efficacy and effectiveness (Chang, 2013; Skaalvik & Skaalvik, 2010; Yoke & Patanik, 2015). Analogously, Carol Dweck's theory of mindsets is positioned as a fundamental concept in the education field. This theory distinguishes between a fixed (i.e., a belief that human capabilities are fixed and cannot be improved) and a growth mindset (i.e., a belief that human capabilities can be changed through effort and persistence), where a fixed mindset is associated with negative outcomes and a growth mindset is linked to favourable outcomes such as positive emotions and academic achievement (Romero et al., 2014; King & dela Rosa, 2013; Yeager et al., 2013). Nevertheless, despite the positive outcomes of EI and mindsets demonstrated in the literature, there seems to be a lack of EI and mindset intervention studies, especially for preservice teachers (i.e., PSTs). PSTs have

been said to be the most vulnerable as they construct their teacher identities and may, therefore, easily succumb to the emotional pressures of this field (Vesely et al., 2014). Besides, it is vital to mould and train PSTs at an early stage to equip them with the necessary psychological tools they need to cope with the stressors of the field. To this effect, the main aim of this thesis was to develop a psychological intervention grounded on EI and mindsets. To the researchers' knowledge, this is the first study that has linked these constructs in an interestingly pragmatic way.

To achieve this broad aim, an intervention was designed, and a pilot study was conducted to understand the impact of a growth mindset and emotional intelligence intervention (GMEI) on PSTs' EI, mindsets, OCB and work engagement. In this study, the intervention content and the overall feasibility of the study was investigated. The findings of this study revealed no statistically significant difference in mean scores for EI, implicit theories of intelligence, implicit theories of emotion, OCB and work engagement between the three-time points (i.e., Time 1- four weeks before the intervention; Time 2- immediately before the intervention; Time 3- immediately after the intervention). Although there was an overall statistically significant difference in mean scores for implicit theories of personality, post hoc tests revealed no significant differences between the three-time points.

Nevertheless, insightful findings were gauged from mean scores and feedback forms. The mean scores for ITI, ITP and OCB were higher in Time 3 compared to Time 1. Although these results were non-significant, these findings suggest that participants' mindsets changed to some extent and demonstrated prosocial behaviour after the intervention. The feedback forms also revealed that participants enjoyed the intervention and thought it was valuable in their line of work. They suggested that the intervention be introduced to all Bachelor of Education levels to have more impact in the education space. However, participants also commented on the shortness of the intervention and stated that more time is needed to grasp the intervention content fully. Lastly, participants suggested that more practical activities and strategies be incorporated into the intervention.

Overall, quantitative results in this pilot study did not reach a statistical significance, which may be due to the small sample size and a lack of a follow-up. However, findings from the feedback

form highlighted that the intervention is valuable in the education field. Results from this pilot study also informed the changes in the intervention used in Study 3 of the thesis.

### ***10.2.2. Research Objective 2/ Study 2: To understand the psychometric properties of the main instruments***

In this thesis, six main instruments were chosen, i.e., Wong and Law Emotional Intelligence Scale (WLEIS); Implicit Theories of Intelligence Scale (ITI); Implicit Person Theories Scale (ITP); Implicit Theories of Emotion Scale (ITE); Organisational Citizenship Behaviour Scale (OCB-S) and Utrecht Work Engagement Scale (UWES-3). A decision was made to investigate the psychometric properties of these scales since there is a lack of studies investigating the psychometric properties of these measures, especially using South African samples.

A confirmatory factor analysis (CFA) was used to investigate the factor structure of the WLEIS. Findings confirmed both a four-factor structure by Wong and Law (2002) which suggests that EI is made up of four dimensions (i.e., SEA, OEA, UOE & ROE) and a second-order factor structure, suggesting that the four dimensions make up a broader EI construct. However, a second-order model was found to be more parsimonious than the four-factor model. In addition, in line with previous research, excellent Cronbach's alphas were found for this measure, indicating good internal consistency.

Furthermore, due to a small number of items, inter-item correlations and Cronbach's alphas were used to investigate the psychometric properties of the implicit theory measures. Both the measures of implicit theories of intelligence and personality revealed acceptable inter-item correlations and Cronbach's alphas. Contrary findings were shown for the implicit theories of emotion measure as it was found to have questionable inter-item correlations and a poor Cronbach's alpha. These findings of the implicit theories of emotion scale must be interpreted by taking into account the nature of the items of the scale. This scale consists of both fixed and growth mindset items. Whilst this provides a well-balanced measure, this may negatively affect the scale's internal consistency. Researchers such as Chyung et al. (2018) asserted that mixing both positive and negative items decrease the internal consistency and, therefore, the scale's reliability. Overall, the poor internal



consistencies of the implicit theories of emotion question the unidimensionality of this measure. However, due to the wide use of this measure, this scale was retained and was included in subsequent analysis.

The psychometric properties of the Organisational Citizenship Behaviour Scale (OCB-S) were investigated in two stages. Firstly, the exploratory factor analysis (EFA) was run to assess the factor structure of the scale. Secondly, the EFA-derived structure was assessed with the CFA. Podsakoff et al.'s (1990) five-factor structure was not supported in this study. Instead, EFA findings with a Direct Oblimin rotation revealed a three-factor structure of OCB, consisting of items related to, i.e., civic virtue, sportsmanship and conscientiousness. Cronbach's alpha values demonstrated an acceptable internal consistency for the civic virtue factor, questionable internal consistency for the sportsmanship factor and a poor internal consistency for the conscientiousness factor. To investigate this three-factor structure further, a CFA was used. The three-factor structure demonstrated a poor fit to the data. The conscientiousness factor showed low item loadings and therefore was removed from the model. An OCB model with two factors (i.e., civic virtue and sportsmanship) was specified in the CFA and demonstrated a good fit for the data. Overall, this research revealed that OCB is best presented by two factors, i.e., civic virtue and sportsmanship.

Lastly, the reliability analysis examined the Utrecht Work Engagement Scale (UWES-3) by Schaufeli et al. (2017). Although the inter-item correlations were acceptable, Cronbach's alpha value was questionable. Overall, some measures in this study demonstrated good reliability for this sample (e.g., WLEIS, Implicit Theories of Intelligence Scale, Implicit Person Theories Scale), whilst others showed poor internal consistency. However, these questionable internal consistencies observed on some scales might be due to a small number of items (Cortina, 1993, as cited in Samuels, 2015).

### ***10.2.3. Research Objective 3/Study 3: To Investigate the Impact and Process Evaluation of a Brief GMEI***

A review of the literature reveals that EI and mindsets are vital psychological constructs in education contexts. These constructs have also been said to contribute to positive outcomes. Thus, an integrated intervention grounded on EI and mindsets was designed and implemented. It was hypothesised that this intervention would enhance PSTs' emotional intelligence, mindsets, organisational citizenship behaviour and work engagement. To this effect, the third objective of this thesis was to investigate the impact and process evaluation of a brief growth mindset and emotional intelligence intervention (GMEI). To fulfil this objective, quantitative and qualitative approaches were employed.

The findings demonstrated that some EI abilities (e.g., self-emotion appraisal and others' emotion appraisal) could be more easily cultivated through training than others. These results were corroborated by qualitative findings where participants stated that they gained invaluable psychological skills such as self-awareness and skills that they can use to deal with challenges through the intervention. Results also supported previous literature and showed that a growth mindset could be taught. There was a statistical significance difference in implicit theories of intelligence between the comparison and the intervention group, where the intervention group demonstrated a growth mindset post-intervention. Findings from a repeated-measures ANOVA also showed a difference in pre-test and post-test scores, where an intervention group espoused an incremental theory of personality and emotion post-intervention. These positive results may be explained by the fact that participants responded well to the intervention. Results revealed that participants were satisfied with the intervention. They thought it was relevant for their field and well delivered.

Nevertheless, whether a positive psychological intervention grounded in EI and mindsets could enhance positive behaviours such as organisational citizenship behaviours and work engagement is still questionable. Although the intervention group showed an increase in sportsmanship scores over time, attrition analysis showed that the intervention group had higher sportsmanship scores in the baseline than participants who dropped out. This may indicate that the

intervention group had an inherent positive quality. To this effect, the intervention grounded in EI and mindsets didn't seem to enhance organisational citizenship behaviours and work engagement. These non-significant results may be explained by many factors. One of these factors was the duration of the intervention. Participants thought the intervention was too short and insufficient to fully grasp the intervention content. Other contextual factors that possibly affected the outcomes included time clashes and resource constraints.

Moreover, invaluable qualitative insights were found from the findings. Participants suggested that an integrated approach is needed to successfully implement such interventions in the education context. This includes embedding the intervention into the curriculum to ensure effective implementation. Lastly, participants recommended that modern technologies be employed during implementation to ensure high participation.

**10.2.4.        *Research Objective 4/Study 4: To examine the direct and indirect relationships between implicit theories, emotional intelligence, organisational citizenship behaviour and work engagement***

The fourth and last objective of this thesis was to examine the direct and indirect relationships between implicit theories, EI, organisational citizenship behaviour and work engagement. It was predicted that EI as an ability to understand emotions positively correlates with implicit theories of intelligence and emotion. Unexpectedly, findings showed no relationship between EI and implicit theories of intelligence. However, findings demonstrated that implicit theories of emotion post-intervention predicted one dimension of EI (i.e., regulation of emotion) during follow-up. As expected, there was no significant relationship between EI and implicit theories of personality since these constructs may be located in different domains.

It was also hypothesised that EI would positively associate with organisational citizenship behaviours (i.e., civic virtue and sportsmanship) and work engagement. Findings revealed a non-significant direct relationship between EI and study outcomes. However, results showed that post-intervention, one EI subscale (i.e., use of emotion) significantly predicted work engagement during follow-up. The relationship between implicit theories (i.e., intelligence, personality and emotion) and

study outcomes was rather interesting and mostly in an unexpected direction. Results revealed a direct, negative relationship between implicit theories of intelligence and civic virtue, whilst sportsmanship and work engagement did not correlate with any implicit theories.

The indirect relationships between variables were also explored. It was predicted that EI would mediate the relationship between implicit theories of intelligence and outcomes (i.e., civic virtue, sportsmanship and work engagement). Results revealed that EI does not mediate the association between implicit theories of intelligence and all outcomes. It was also predicted that EI would mediate the relationship between implicit theories of emotion and study outcomes. Results revealed that EI is a mediator in the relationship between implicit theories of emotion and two outcomes (i.e., civic virtue and work engagement). Lastly, findings demonstrated that EI does not play a moderating role in the relationship between implicit theories of personality and outcomes.

Overall, all thesis research objectives were fulfilled. The following section discusses the theoretical and practical implications of the findings.

### **10.3. Theoretical, Practical and Methodological Contributions**

This thesis had significant theoretical, practical, and methodological contributions to the area of applied psychology. These contributions are presented below.

#### ***10.3.1. Psychometric Properties of the Wong and Law Emotional Intelligence Scale, Implicit Theory Measures, Organisational Citizenship Behaviour Scale and Utrecht Work Engagement Scale***

The psychometric properties of six instruments were investigated. Although the WLEIS, implicit theories of intelligence and personality scales demonstrated fairly good internal consistencies, the other measures revealed questionable psychometric properties. In addition, instead of a five-dimension OCB model suggested by Podsakoff et al. (1990), OCB was found to be well presented by two factors, i.e., civic virtue and sportsmanship. The findings of this thesis extend our

knowledge by providing evidence of the psychometric properties of these scales in a South African sample. Furthermore, reliable measurement is a vital component in intervention studies. Measures used in intervention studies must be reliable to prevent measurement error and to correctly detect the changes attributable to the intervention (Kimberlin & Winterstein, 2008). Thus, the findings of this thesis initiate a further investigation of these scales and will assist researchers in refining the tools and in choosing the best tools for their research.

### ***10.3.2. The Impact of the Growth Mindset & Emotional Intelligent Intervention (GMEI)***

In this thesis, an intervention grounded on EI and mindset psychological theories was designed. The main aim of this intervention was to change participants' mindsets and enhance their EI abilities. It was also expected that this intervention would cultivate positive behaviours in the form of OCBs and work engagement. The constructs of EI and mindsets have been independently studied from existing literature, and according to the researchers' knowledge, this is the first study that has integrated these two concepts interestingly and pragmatically. The results confirmed prior research by demonstrating that some EI abilities can be enhanced through training and that a growth mindset can be taught. It is conceivable that the combination of these concepts influenced the change in outcomes observed post-intervention. A growth mindset is a belief that human capabilities can be improved through effort and persistence (Dweck, 2006). Results demonstrated that the intervention group held a growth mindset where they believed they could develop their capabilities such as intelligence, personality and how they handle emotions. It is likely that the mindset component of the intervention enhanced openness and willingness to improve EI abilities. Thus, this thesis extends our knowledge and provides a foundation to be used in developing EI interventions. This information could be useful to applied psychologists and practitioners interested in EI development. Future EI intervention studies must include the growth mindset component to investigate its impact further.

Furthermore, intervention studies often overlook the impact of contextual realities and process factors that impact the intervention outcomes and implementation. This thesis included an intervention evaluation feature that sought to understand the process factors that affected the

implementation of the intervention. Intervention evaluation is essential in intervention studies as it sheds light on how the intervention was delivered and the barriers that hindered effective implementation (Arends et al., 2014). The findings of this thesis uncovered several factors that may have impacted the outcomes. This included the duration of the intervention, conflicting schedules or time clashes, resources, and logistical constraints. These findings could be beneficial for designing and implementing interventions in the education context. Applied psychologists and practitioners must take these barriers into consideration when designing and implementing interventions in the education field. Most interestingly, participants suggested that an integrated approach must be employed. This notion is supported in the literature, where it is said that interventions in the education field should be fully supported and integrated into the system and educational processes to ensure effective implementation (Romasz et al., 2004).

In addition, this study was conducted in South Africa. Most intervention studies, especially positive psychology interventions, are based in Western countries with different cultural interpretations and ways of understanding. Understanding the impact of such an intervention in a non-Western country contributes significantly to knowledge. It was found that the intervention included in this thesis enhanced some EI abilities and changed the mindsets of PSTs in South Africa. Participants also revealed the importance of this intervention and how it contributed to their behavioural change. These findings confirm the relevance and cross-cultural applicability of positive psychology interventions. This may initiate further validation of positive psychology interventions. The findings of this thesis could also inform the education policy and teacher education programmes. The South African Department of Higher Education and Training could use these results to drive a nationwide implementation of EI and mindsets interventions to well-equip PSTs and experienced teachers with these necessary psychological skills. These interventions could also be filtered down into schools to foster prosocial, resilient, and positive pedagogical approaches.

### ***10.3.3. Relationships between Implicit Theories, Emotional Intelligence, Organisational Citizenship Behaviour and Work Engagement.***

This thesis investigated the associations between implicit theories, EI, organisational citizenship behaviour and work engagement. According to the researchers' knowledge, this is the first study to examine the relationships between these variables using longitudinal data. A review of the literature revealed that most studies are correlational in nature. However, a correlational design with simple correlation analysis provides a limited understanding of the associations as it doesn't imply causation. Longitudinal data used in this study allowed the researcher to understand the changes in variables over time and to observe the sequence of changes (Sánchez-Álvarez et al., 2015). To this effect, the inclusion of this feature contributes to knowledge by clarifying the causal relationships between the variables.

Of particular interest, the findings demonstrated a positive link between implicit theories of emotion and one EI dimension. It was found that implicit theories of emotion significantly predict the regulation of emotion EI subscale. This indicates that individuals who hold a belief that emotions are malleable are more likely to possess the ability to manage their emotions. These results pose significant practical implications. A strong relationship between implicit theories of emotion and EI suggests that these psychological constructs could work in a complementary manner. As mentioned previously, applied psychologists could include the mindset theory in their interventions. Information about how emotions are amenable to change and can be regulated could strengthen EI interventions.

In addition, this thesis investigated the indirect relationships between study variables. The findings in this thesis revealed that EI mediates the relationship between implicit theories of emotion and two study outcomes (i.e., civic virtue and work engagement). These findings confirm prior research by clarifying the significant role of EI. Most importantly, these results add to the understanding of the Broaden-and-Build theory of positive emotions by Fredrickson (1998). According to this theory, positive emotions influence cognitive changes, resulting in positive responses (Conway et al., 2013; Fredrickson, 1998; Fredrickson & Cohn, 2008). This theory also maintains that positive emotions broaden cognitive changes that build long-term psychological,

physical and social resources (Conway et al., 2013; Fredrickson & Cohn, 2008; Fredrickson, 2004). Research shows that individuals who believe that emotions can be managed tend to experience positive emotions (Tamir et al., 2007). This belief is critical as it can enable the use of effective emotion management strategies (De Castella et al., 2013). Therefore, it is likely to influence cognitive changes where individuals build EI abilities and become more confident in understanding and managing their emotions. It is undoubtedly that these EI abilities are a great personal resource. EI has been associated with positive outcomes, and in this thesis, it was demonstrated that EI indeed leads to positive behaviour in the form of civic virtue and work engagement.

It is apparent that the relationships observed in this thesis can be explained by the Broaden-and-Build theoretical assumptions. This expands our understanding and indicates that this theory is applicable and, thus, can be used as a framework in future intervention studies.

#### **10.4. Policy Implications of the Findings**

In addition to theoretical, methodological, and practical contributions, the findings established in this thesis have policy relevance.

- Firstly, the findings demonstrated that the Growth Mindset and Emotional Intelligence intervention (GMEI) enhanced some EI abilities and changed PSTs' mindsets. The positive role of EI and a growth mindset in the education field has been highly emphasized. As previously stated, teaching is an emotional practice. Consequently, there exists a need for psychological tools to cope with the demands experienced in this field. In addition, teachers play a significant role in learners' socio-emotional development as they are expected to not only impart knowledge but also apply empathetic capabilities (Hargreaves, 2001). An intervention of this nature could contribute to a 'humanised', positive education context that is shaped by learner-centred approaches. A positive education environment is likely to enhance teacher well-being, leading to quality education. Against this backdrop, policymakers should include the elements of this intervention in the South African teacher education and development policy framework. The South African Department of Higher



Education and Training should support the nationwide implementation of the EI and mindsets interventions to equip PSTs and experienced teachers. PSTs in this study revealed that the GMEI was valuable and that the sessions provided a space for them to share their thoughts and experiences. As a result, the GMEI can be introduced as part of the teacher education and training curriculum to enable PSTs to reflect, debrief, learn and co-create. The elements of this intervention can also be part of teachers' continuous professional development to ensure its application at the school level. Policymakers should monitor the implementation of the GMEI at scale and evaluate its effectiveness, especially for teachers and learners in underserved communities.

- Secondly, research on PP interventions such as the GMEI should be supported at a policy level. Good health, well-being, and quality education are part of the Sustainable Development Goals (SDGs). The education policy framework should support and prioritise research and further development of the 'contextualised' GMEI by providing more funding and support structures. This will require solid collaborative efforts from different relevant stakeholders (e.g. education policymakers, institutions of higher learning, teachers, preservice teachers, non-profit organisations involved in the education sector, etc.). Engaging with diverse stakeholders is likely to institutionalise and expand the inclusion of the GMEI in the curriculum, bridge the gap between theory and practice and eliminate the barriers to implementing PP interventions in the education field.

- Lastly, training and developing EI abilities and mindsets is a continuous process that requires proactive solutions. Thus, policymakers are encouraged to create a task team to drive this process. The team must increase attention to the relevance of PP-based interventions such as the GMEI in education and promote open conversations and knowledge sharing between South African-based and international stakeholders.

### **10.5. Limitations and Considerations for Future Research**

The findings of this thesis contribute to theory and have significant practical and policy implications. However, this research study is not without its limitations. Firstly, the quasi-experimental research design was used. Although multiple time points were used to strengthen the

validity of the study, there was a lack of random assignment. To this effect, there are different threats to internal validity that may have impacted the study results, such as contamination. Future research studies must use robust research designs to strengthen the study's internal validity. A true experimental design could be used, or a more robust quasi-experimental design with even more observations before and after the intervention.

The second limitation is the small sample size. Small sample sizes result in low statistical power (Button et al., 2013). In addition, this factor also limited the kind of statistical analyses to be employed. For example, a minimum sample size of 200 is required to run a Structural Equation Modelling (SEM) (Kline, 2011). Thus, future studies should use effective recruitment and retention strategies. The third limitation is the use of preservice teachers from the two universities. This means that it would be difficult to generalise the findings to all PSTs in South Africa. South Africa is a diverse, multicultural country. Therefore, future studies should consider involving PSTs from all universities and from different ethnic backgrounds. Moreover, other samples such as experienced teachers should be used. PSTs have insufficient teaching experience. The impact of such interventions in the education field will be more detected when including experienced teachers as a sample due to their vast expertise and regular interaction with learners.

The fifth limitation is time constraints. The researcher had limited time to complete the study. In addition, participants also commented on the low dosage or short duration of the intervention. Future research studies must ensure that enough time is given to the intervention. More practical activities could be included for participants to grasp EI and mindset concepts fully. However, given the context of the education field, which is characterised by a busy schedule, it is suggested that future studies consider integrating their studies into the curriculum. The sixth limitation is the measures used. The findings of the thesis revealed that some questionnaires had low internal consistencies. In addition, only two OCB dimensions were included in the analysis. Future research studies could investigate the validity of these measures. Quite frankly, the focus should be on developing questionnaires appropriate for the South African context, given the fact that most of these measures were developed in Western countries. These concepts may be understood differently in South Africa.

Future studies could also incorporate peer-rated questionnaires to strengthen their assessments, especially in intervention studies.

The final limitation is a lack of previous research studies investigating the association between the study variables. Existing research is mainly descriptive and does not demonstrate causal relationships between variables. In this study, the hypothesis that the GMEI could cultivate positive behaviours such as OCBs and work engagement was based on correlational studies. Moreover, the fact that this intervention did not enhance these positive behaviours suggests that more studies are needed to determine the causal associations between the variables. Future studies could also investigate the impact of this intervention on other outcome variables such as well-being.

## **10.6. Chapter Summary/Conclusion**

EI and mindsets are crucial in educational settings (Hen & Sharabi-Nov, 2014; Yeager et al., 2013). However, these concepts are independently studied. Based on their positive outcomes, it is conceivable that these outcomes could be employed in a complementary manner. To this effect, this thesis has developed and tested the intervention grounded on EI and mindsets psychological theories. The aim was to investigate the impact of this intervention on PSTs' EI, mindsets, organisational citizenship behaviours and work engagement. The findings indicated that a growth mindset and some EI abilities could be cultivated through training. As arguably positive psychology constructs, the intervention was also expected to enhance OCBs and work engagement (Bakker et al., 2008; Luthans & Yousseff, 2007). The results found in this thesis rather paint a bleak picture of the possibility of training and cultivating these behaviours. Nevertheless, it is possible that a higher intervention dosage is needed to enhance these behaviours thoroughly. The failure of the intervention to enhance these outcomes can also be attributed to the measures employed in the study. Some measures demonstrated poor internal consistencies. This may be due to the different cultural interpretations and meanings attached to these psychological constructs. Therefore, future research should focus on the development of culturally appropriate questionnaires.

Although the moderating role of EI was not ascertained, the mediating role of this crucial personal resource was confirmed. It was found that implicit theories of emotion influence outcomes via EI. This is a significant finding as it shows how these variables interact to produce favourable outcomes. This thesis pointed out that a belief that emotions are malleable and controllable positively predicts EI abilities. Indeed, individuals with this belief are more likely to employ effective emotion management strategies (De Castella et al., 2013). The direct relationship between implicit theories of emotion and EI is linked with positive outcomes, i.e., OCBs and work engagement. The findings established in this thesis extend our understanding of the Broaden-and-Build theory of positive emotions and add to the broader positive psychology movement.

## REFERENCES

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- Abdollahi, A., Hosseinian, S., Panahipour, H., Najafi, M., & Soheili, F. (2019). Emotional intelligence as a moderator between perfectionism and happiness. *School Psychology International, 40*(1), 88-103.
- Abdullah, N. A. (2018). Examining the Psychometric Properties of the Schutte's Self Report Emotional Intelligences Scale (SREIS). *Jurnal Psikologi Malaysia, 32*(1).
- Abraham, R. (1999). Emotional intelligence in organizations: A conceptualization. *Genetic, social, and general psychology monographs, 125*(2), 209.
- Ackley, D. (2016). Emotional intelligence: A practical review of models, measures, and applications. *Consulting Psychology Journal: Practice and Research, 68*(4), 269.
- Acosta-Prado, J. C., & Zárate-Torres, R. A. (2019). Validation of the wong and law emotional intelligence scale for chilean managers. *Suma psicológica, 26*(2), 110-118.
- Adeyemo, D. A., & Chukwudi, A. R. (2014). Emotional Intelligence and Teacher Efficacy as Predictors of Teacher Effectiveness among Pre-Service Teachers in Some Nigerian Universities. *International Journal of Evaluation and research in Education, 3*(2), 85-90.
- Akhtar, R., Boustani, L., Tsivrikos, D., & Chamorro-Premuzic, T. (2015). The engageable personality: Personality and trait EI as predictors of work engagement. *Personality and Individual Differences, 73*, 44-49.
- Alavinia, P., & Ahmadzadeh, T. (2012). Toward a Reappraisal of the Bonds between Emotional Intelligence and Burnout. *English Language Teaching, 5*(4), 37-50.
- Aldridge, V. K., Dovey, T. M., & Wade, A. (2017). Assessing test-retest reliability of psychological measures. *European Psychologist.*
- Alegre, A., Pérez-Escoda, N., & López-Cassá, E. (2019). The relationship between trait emotional intelligence and personality. Is trait EI really anchored within the big five, big two and big one frameworks? *Frontiers in psychology, 10*, 866.

- Alrajhi, M., Aldhafri, S., Alkharusi, H., Albusaidi, S., Alkharusi, B., Ambusaidi, A., & Alhosni, K. (2017). The predictive effects of math teachers' emotional intelligence on their perceived self-efficacy beliefs. *Teaching and Teacher Education, 67*, 378-388.
- Altman, N., & Krzywinski, M. (2015). Points of Significance: Association, correlation and causation. *Nature methods, 12*(10).
- Anari, N. N. (2012). Teachers: emotional intelligence, job satisfaction, and organizational commitment. *Journal of workplace Learning*.
- Andersen, S. C., & Nielsen, H. S. (2016). Reading intervention with a growth mindset approach improves children's skills. *Proceedings of the National Academy of Sciences, 113*(43), 12111-12113.
- Andrei, F., Siegling, A. B., Aloe, A. M., Baldaro, B., & Petrides, K. V. (2016). The incremental validity of the Trait Emotional Intelligence Questionnaire (TEIQue): A systematic review and meta-analysis. *Journal of personality assessment, 98*(3), 261-276.
- Antonakis, J. (2004). On why "emotional intelligence" will not predict leadership effectiveness beyond IQ or the "big five": An extension and rejoinder. *Organizational Analysis*.
- Antonakis, J., & Dietz, J. (2010). Emotional intelligence: On definitions, neuroscience, and marshmallows. *Industrial and Organizational Psychology, 3*(2), 165-170.
- Antonakis, J., 2015. Emotional Intelligence. The Hype, the Hope, the Evidence. In: C. Price, and E. Walle, eds. 2017. Emotion Researcher. ISRE's Sourcebook for Research on Emotion and Affect.
- Antonakis, J., Ashkanasy, N. M., & Dasborough, M. T. (2009). Does leadership need emotional intelligence?. *The leadership quarterly, 20*(2), 247-261.
- Arends, I., Bültmann, U., Nielsen, K., van Rhenen, W., de Boer, M. R., & van der Klink, J. J. (2014). Process evaluation of a problem solving intervention to prevent recurrent sickness absence in workers with common mental disorders. *Social Science & Medicine, 100*, 123-132.

- Argentero, P., Cortese, C. G., & Ferretti, M. S. (2008). An evaluation of organizational citizenship behavior: Psychometric characteristics of the Italian version of Podsakoff et al.'s scale. *TPM–Testing, Psychometrics, Methodology in Applied Psychology*, *15*(2), 61-75.
- Aronson, E. (1999). The power of self-persuasion. *American Psychologist*, *54*(11), 875.
- Aronson, J., Fried, C. B., & Good, C. (2002). Reducing the effects of stereotype threat on African American college students by shaping theories of intelligence. *Journal of experimental social psychology*, *38*(2), 113-125.
- Austin, E. J. (2010). Measurement of ability emotional intelligence: Results for two new tests. *British Journal of Psychology*, *101*(3), 563-578.
- Austin, E. J. (2010). Measurement of ability emotional intelligence: Results for two new tests. *British Journal of Psychology*, *101*(3), 563-578.
- Azmi, F. T., Desai, K., & Jayakrishnan, K. (2016). Organizational citizenship behavior (OCB): A comprehensive literature review. *Sumedha Journal of Management*, *5*(1), 102-117.
- Bahari, S. F. (2010). Qualitative versus quantitative research strategies: contrasting epistemological and ontological assumptions. *Sains Humanika*, *52*(1).
- Baka, L. (2015). Does job burnout mediate negative effects of job demands on mental and physical health in a group of teachers? Testing the energetic process of job demands-resources model. *International journal of occupational medicine and environmental health*, *28*(2), 335.
- Bakker, A. B., & Albrecht, S. (2018). Work engagement: current trends. *Career Development International*.
- Bakker, A. B., & Bal, M. P. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of occupational and organizational psychology*, *83*(1), 189-206.
- Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career Development International*, *13*(3), 209–223. <https://doi.org/10.1108/13620430810870476>.

- Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: taking stock and looking forward. *Journal of occupational health psychology, 22*(3), 273.
- Bakker, A. B., & Schaufeli, W. B. (2014). Work engagement. *Organizational Behaviour: The Blackwell Encyclopedia of Management. West Sussex, UK: Wiley.*
- Bakker, A. B., Albrecht, S. L., & Leiter, M. P. (2011). Key questions regarding work engagement. *European journal of work and organizational psychology, 20*(1), 4-28.
- Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work & stress, 22*(3), 187-200.
- Bandura, A. (1994). Self-efficacy. In V. S. Ramachandran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). New York: Academic Press. (Reprinted in H. Friedman [Ed.], *Encyclopedia of mental health*. San Diego: Academic Press, 1998).
- Baranik, L. E., & Eby, L. (2016). Organizational citizenship behaviors and employee depressed mood, burnout, and satisfaction with health and life: The mediating role of positive affect. *Personnel Review.*
- Baranik, L. E., Stanley, L. J., Bynum, B. H., & Lance, C. E. (2010). Examining the construct validity of mastery-avoidance achievement goals: A meta-analysis. *Human Performance, 23*(3), 265-282.
- Barari, R., & Jamshidi, L. (2015). The effectiveness of emotional intelligence on job burnout mediated the self-efficacy among elementary teachers. *International Journal of Educational and Psychological Researches, 1*(3), 212.
- Bar-On, R. (1997). *BarOn emotional quotient inventory*. Multi-health systems.
- Bar-On, R. (2000). Emotional and social intelligence: Insights from the Emotional Quotient Inventory.
- Bar-On, R. (2006). The Bar-On model of emotional-social intelligence (ESI) 1. *Psicothema, 13*-25.



- Bar-On, R. (2010). Emotional intelligence: An integral part of positive psychology. *South African Journal of Psychology, 40*(1), 54-62.
- Barreiro, C. A., & Treglown, L. (2020). What makes an engaged employee? A facet-level approach to trait emotional intelligence as a predictor of employee engagement. *Personality and Individual Differences, 159*, 109892.
- Barry, A. E. (2005). How attrition impacts the internal and external validity of longitudinal research. *The Journal of school health, 75*(7), 267.
- Barzoki, A. S., & Ghujali, T. (2013). Study the relationship of internal marketing with job satisfaction, organizational commitment and organizational citizenship behavior. *International Journal of Academic Research in Business and Social Sciences, 3*(3), 33.
- Bateman, T. S., & Organ, D. W. (1983). Job satisfaction and the good soldier: The relationship between affect and employee “citizenship”. *Academy of management Journal, 26*(4), 587-595.
- Beigi, M., & Shirmohammadi, M. (2011). Effects of an emotional intelligence training program on service quality of bank branches. *Managing Service Quality: An International Journal*.
- Belenky, D. M., & Nokes-Malach, T. J. (2012). Motivation and transfer: The role of mastery-approach goals in preparation for future learning. *Journal of the Learning Sciences, 21*(3), 399-432.
- Beltman, S., & Poulton, E. (2019). “Take a step back”: teacher strategies for managing heightened emotions. *The Australian Educational Researcher, 46*(4), 661-679.
- Bermejo-Toro, L., Prieto-Ursúa, M., & Hernández, V. (2016). Towards a model of teacher well-being: Personal and job resources involved in teacher burnout and engagement. *Educational Psychology, 36*(3), 481-501.

- Bisiacchi, P. S., Borella, E., Bergamaschi, S., Carretti, B., & Mondini, S. (2008). Interplay between memory and executive functions in normal and pathological aging. *Journal of clinical and experimental neuropsychology*, *30*(6), 723-733.
- Black, S., & Allen, J. D. (2017). Part 2: goals, mindset, and self-regulation. *The Reference Librarian*, *58*(2), 159-173.
- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child development*, *78*(1), 246-263.
- Blad, E. (2016). Teachers seize on 'growth mindset,' but classroom practice lags. *Education Week*, *36*(5), 1.
- Blanco, E., García, L. F., & Aluja, A. (2016). The location of the Trait Emotional Intelligence in the Zuckerman's Personality Model space and the role of General Intelligence and social status. *Scandinavian journal of psychology*, *57*(5), 453-463.
- Bolier, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., & Bohlmeijer, E. (2013). Positive psychology interventions: a meta-analysis of randomized controlled studies. *BMC public health*, *13*(1), 1-20.
- Bolino, M. C., Hsiung, H. H., Harvey, J., & LePine, J. A. (2015). "Well, I'm tired of tryin'!" Organizational citizenship behavior and citizenship fatigue. *Journal of Applied Psychology*, *100*(1), 56.
- Bolino, M. C., Klotz, A. C., Turnley, W. H., & Harvey, J. (2013). Exploring the dark side of organizational citizenship behavior. *Journal of Organizational Behavior*, *34*(4), 542-559.
- Bolino, M. C., Turnley, W. H., & Niehoff, B. P. (2004). The other side of the story: Reexamining prevailing assumptions about organizational citizenship behavior. *Human Resource Management Review*, *14*(2), 229-246.
- Bonett, D. G., & Wright, T. A. (2015). Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of organizational behavior*, *36*(1), 3-15.

- Boniwell, I. (2012). *Positive psychology in a nutshell: The science of happiness: The science of happiness*. McGraw-Hill Education (UK).
- Borman, W. C., & Motowidlo, S. J. (2014). *Organizational citizenship behavior and contextual performance: A special issue of human performance*. Psychology Press.
- Bouckennooghe, D., Raja, U., & Abbas, M. (2014). How does self-regulation of emotions impact employee work engagement: The mediating role of social resources. *Journal of Management & Organization*, 20(4), 508-525.
- Boudewijns, E. A., Pepels, J. J. S., Van Kann, D., Konings, K., Van Schayck, C. P., & Willeboordse, M. (2019). Non-response and external validity in a school-based quasi-experimental study 'The Healthy Primary School of the Future': A cross-sectional assessment. *Preventive medicine reports*, 14, 100874.
- Boyatzis, R. E. (2008). Competencies in the 21st century. *Journal of management development*.
- Boyatzis, R. E. (2009). Competencies as a behavioral approach to emotional intelligence. *Journal of Management Development*.
- Boyatzis, R. E. (2016). Commentary on Ackley (2016): Updates on the ESCI as the behavioral level of emotional intelligence. *Consulting Psychology Journal: Practice and Research*, 68(4), 287-293. <https://doi.org/10.1037/cpb0000074>
- Boyatzis, R. E., Goleman, D., & Rhee, K. (2000). Clustering competence in emotional intelligence: Insights from the Emotional Competence Inventory (ECI). *Handbook of emotional intelligence*, 99(6), 343-362.
- Brackett, M. A., & Katulak, N. A. (2006). Emotional intelligence in the classroom: Skill-based training for teachers and students. *Applying emotional intelligence: A practitioner's guide*, 1-27.
- Brackett, M. A., & Salovey, P. (2006). Measuring emotional intelligence with the Mayer-Salovey-Caruso emotional intelligence test (MSCEIT). *Psicothema*, 18, 34-41.

- Brackett, M. A., & Simmons, D. (2015). Emotions matter. *Educational leadership*, 73(2), 22-27.
- Brackett, M. A., Bertoli, M., Elbertson, N., Bausseron, E., Castillo, R., & Salovey, P. (2013). Emotional intelligence. *Handbook of cognition and emotion*, 365.
- Bråten, I., & Strømsø, H. I. (2004). Epistemological beliefs and implicit theories of intelligence as predictors of achievement goals. *Contemporary Educational Psychology*, 29(4), 371-388.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 57–71). American Psychological Association. <https://doi.org/10.1037/13620-004>
- Briggs, S. R., & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of personality*, 54(1), 106-148.
- Brott, P. E. (2004). Constructivist assessment in career counseling. *Journal Of Career Development*, 30(3), 189-200. doi: 10.1023/B:JOCD.0000015539.21158.53.
- Brunetto, Y., Teo, S. T., Shacklock, K., & Farr-Wharton, R. (2012). Emotional intelligence, job satisfaction, well-being and engagement: explaining organisational commitment and turnover intentions in policing. *Human Resource Management Journal*, 22(4), 428-441.
- Burić, I., & Kim, L. E. (2020). Teacher self-efficacy, instructional quality, and student motivational beliefs: An analysis using multilevel structural equation modeling. *Learning and Instruction*, 66, 101302.
- Burić, I., & Macuka, I. (2018). Self-efficacy, emotions and work engagement among teachers: A two wave cross-lagged analysis. *Journal of Happiness Studies*, 19(7), 1917-1933.

- Burić, I., Penezić, Z., & Sorić, I. (2017). Regulating emotions in the teacher's workplace: Development and initial validation of the Teacher Emotion-Regulation Scale. *International Journal of Stress Management*, 24(3), 217.
- Burke, R. J., Koyuncu, M., Jing, W., & Fiksenbaum, L. (2009). Work engagement among hotel managers in Beijing, China: potential antecedents and consequences. *Tourism Review*.
- Burnette, J. L., O'boyle, E. H., VanEpps, E. M., Pollack, J. M., & Finkel, E. J. (2013). Mind-sets matter: a meta-analytic review of implicit theories and self-regulation. *Psychological bulletin*, 139(3), 655.
- Burns, W. T., & DiPaola, M. F. (2013). A study of organizational justice, organizational citizenship behavior, and student achievement in high schools. *American Secondary Education*, 4-23.
- Burns, W. T., & DiPaola, M. F. (2013). Organisational Justice Perceptions of High School Teachers: Relationships to Organisational Citizenship Behaviour and Student Achievement. *American Secondary Education*, 42(1), 4-23.
- Button, K. S., Ioannidis, J. P., Mokrysz, C., Nosek, B. A., Flint, J., Robinson, E. S., & Munafò, M. R. (2013). Confidence and precision increase with high statistical power. *Nature Reviews Neuroscience*, 14(8), 585-585.
- Byrne, B. M. (2005). Factor analytic models: Viewing the structure of an assessment instrument from three perspectives. *Journal of personality assessment*, 85(1), 17-32.
- Cabello, R., & Fernández-Berrocal, P. (2015). Implicit theories and ability emotional intelligence. *Frontiers in Psychology*, 6, 700.
- Cabello, R., Navarro, B., Latorre, J. M., & Fernández-Berrocal, P. (2014). Ability of university-level education to prevent age-related decline in emotional intelligence. *Frontiers in aging neuroscience*, 6, 37.
- Cabello, R., Sorrel, M. A., Fernández-Pinto, I., Extremera, N., & Fernández-Berrocal, P. (2016). Age and gender differences in ability emotional intelligence in adults: A cross-sectional study. *Developmental psychology*, 52(9), 1486.

- Cachia, M., & Millward, L. (2011). The telephone medium and semi-structured interviews: a complementary fit. *Qualitative Research in Organizations and Management: An International Journal*.
- Callea, A., De Rosa, D., Ferri, G., Lipari, F., & Costanzi, M. (2019). Are more intelligent people happier? Emotional intelligence as mediator between need for relatedness, happiness and flourishing. *Sustainability*, *11*(4), 1022.
- Campbell, D. T., & Stanley, J. C. (2015). *Experimental and quasi-experimental designs for research*. Ravenio Books.
- Caniëls, M. C., Semeijn, J. H., & Renders, I. H. (2018). Mind the mindset! The interaction of proactive personality, transformational leadership and growth mindset for engagement at work. *Career Development International*.
- Çapri, B., Gündüz, B., & Akbay, S. E. (2017). Utrecht Work Engagement Scale-Student Forms'(UWES-SF) Adaptation to Turkish, Validity and Reliability Studies, and the Mediator Role of Work Engagement between Academic Procrastination and Academic Responsibility. *Educational Sciences: Theory and Practice*, *17*(2), 411-435.
- Carmeli, A. (2003). The relationship between emotional intelligence and work attitudes, behavior and outcomes: An examination among senior managers. *Journal of managerial Psychology*.
- Carmeli, A., & Josman, Z. E. (2006). The relationship among emotional intelligence, task performance, and organizational citizenship behaviors. *Human performance*, *19*(4), 403-419.
- Carmeli, A., Yitzhak-Halevy, M., & Weisberg, J. (2009). The relationship between emotional intelligence and psychological wellbeing. *Journal of Managerial Psychology*.
- Caruso, D. R., Mayer, J. D., & Salovey, P. (2002). Relation of an ability measure of emotional intelligence to personality. *Journal of personality assessment*, *79*(2), 306-320.
- Carvalho, V. S., Guerrero, E., Chambel, M. J., & González-Rico, P. (2016). Psychometric properties of WLEIS as a measure of emotional intelligence in the Portuguese and Spanish medical students. *Evaluation and Program Planning*, *58*, 152-159.

- Castillo, R., Salguero, J. M., Fernández-Berrocal, P., & Balluerka, N. (2013). Effects of an emotional intelligence intervention on aggression and empathy among adolescents. *Journal of adolescence, 36*(5), 883-892.
- Castillo-Montoya, M. (2016). Preparing for Interview Research: The Interview Protocol Refinement Framework. *Qualitative Report, 21*(5).
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate behavioral research, 1*(2), 245-276.
- Cek, K., & Eyupoglu, S. (2020). Does a job satisfaction and organisational citizenship behaviour relationship exist among teachers? *South African Journal of Education, 40*(2), S1-S12.
- Chahal, H., & Mehta, S. (2010). Antecedents and consequences of organisational citizenship behaviour (OCB): A conceptual framework in reference to health care sector. *Journal of Services Research, 10*(2), 25.
- Chambliss, D. F., & Schutt, R. K. (2006). *Making Sense of the Social World: Methods of Investigation* (Vol. 6).
- Chang, M. L. (2013). Toward a theoretical model to understand teacher emotions and teacher burnout in the context of student misbehavior: Appraisal, regulation and coping. *Motivation and Emotion, 37*(4), 799-817.
- Chen, J. A., & Pajares, F. (2010). Implicit theories of ability of Grade 6 science students: Relation to epistemological beliefs and academic motivation and achievement in science. *Contemporary Educational Psychology, 35*(1), 75-87.
- Chen, S. L., Chen, J. H., & Lee, Y. H. (2018). A comparison of competing models for understanding industrial organization's acceptance of cloud services. *Sustainability, 10*(3), 673.
- Chen, W. W., & Wong, Y. L. (2015). Chinese mindset: Theories of intelligence, goal orientation and academic achievement in Hong Kong students. *Educational Psychology, 35*(6), 714-725.

- Cherniss, C. (2010). Emotional intelligence: New insights and further clarifications. *Industrial and Organizational Psychology*, 3(2), 183-191.
- Cherniss, C. (2010). Emotional intelligence: Toward clarification of a concept. *Industrial and organizational psychology*, 3(2), 110-126.
- Chesnut, S. R., & Cullen, T. A. (2014). Effects of self-efficacy, emotional intelligence, and perceptions of future work environment on preservice teacher commitment. *The Teacher Educator*, 49(2), 116-132.
- Cheung, P., Franks, P., Kramer, M., Drews-Botsch, C., Welsh, J., Kay, C., ... & Gazmararian, J. (2019). Impact of a Georgia elementary school-based intervention on physical activity opportunities: A quasi-experimental study. *Journal of science and medicine in sport*, 22(2), 191-195.
- Chiu, C. Y., Hong, Y. Y., & Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of personality and social psychology*, 73(1), 19.
- Choi, M., Suh, C., Choi, S. P., Lee, C. K., & Son, B. C. (2020). Validation of the Work Engagement Scale-3, used in the 5th Korean Working Conditions Survey. *Annals of Occupational and Environmental Medicine*, 32.
- Choong, Y. O., Ng, L. P., Na, S. A., & Tan, C. E. (2019). The role of teachers' self-efficacy between trust and organisational citizenship behaviour among secondary school teachers. *Personnel Review*.
- Chyung, S. Y., Barkin, J. R., & Shamsy, J. A. (2018). Evidence-based survey design: The use of negatively worded items in surveys. *Performance Improvement*, 57(3), 16-25.
- Ciarrochi, J., Atkins, P. W., Hayes, L. L., Sahdra, B. K., & Parker, P. (2016). Contextual positive psychology: Policy recommendations for implementing positive psychology into schools. *Frontiers in psychology*, 7, 1561.



- Clandinin, D. J., Long, J., Schaefer, L., Downey, C. A., Steeves, P., Pinnegar, E., ... & Wnuk, S. (2015). Early career teacher attrition: Intentions of teachers beginning. *Teaching education*, 26(1), 1-16.
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7(3), 309–319. <https://doi.org/10.1037/1040-3590.7.3.309>
- Clarke, N. (2006). Emotional intelligence training: A case of caveat emptor. *Human Resource Development Review*, 5(4), 422-441.
- Clarke, N. (2010). The impact of a training programme designed to target the emotional intelligence abilities of project managers. *International Journal of Project Management*, 28(5), 461-468.
- Coetzee, M., Botha, J.A, Kiley, J., & Truman, K. (2019). *Practising learning and development in South African organisations (3rd ed.)*. Juta and company [Pty] Ltd.
- Cohen, A., & Abedallah, M. (2015). The mediating role of burnout on the relationship of emotional intelligence and self-efficacy with OCB and performance. *Management Research Review*.
- Cohen, A., & Avrahami, A. (2006). The relationship between individualism, collectivism, the perception of justice, demographic characteristics and organisational citizenship behaviour. *The Service Industries Journal*, 26(8), 889-901.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Second Edition. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Collaborative for Academic, Social, and Emotional Learning (CASEL). (2015). *Effective Social and Emotional Learning Programs – Middle and High School Edition*. Accessed from [casel-secondary-guide.pdf \(peacemakerresources.org\)](https://casel-secondary-guide.pdf(peacemakerresources.org))
- Colomeischi, A. A., & Colomeischi, T. (2014). Teachers' attitudes towards work in relation with emotional intelligence and self-efficacy. *Procedia-Social and Behavioral Sciences*, 159, 615-619.

- Comrey, L.A. & Lee, H.B. (1992). *A first course in factor analysis* (2nd ed.). Hillside, NJ: Lawrence Erlbaum Associates.
- Conte, J. M. (2005). A review and critique of emotional intelligence measures. *Journal of organizational behavior*, 26(4), 433-440.
- Conway, A. M., Tugade, M. M., Catalino, L. I., & Fredrickson, B. L. (2013). The broaden-and-build theory of positive emotions: Form, function and mechanisms. *The Oxford handbook of happiness*, 17-34.
- Cook, D. A., Gas, B. L., & Artino Jr, A. R. (2018). Measuring mindsets and achievement goal motivation: A validation study of three instruments. *Academic Medicine*, 93(9), 1391-1399.
- Cook, T. D., & Shadish, W. R. (1994). Social experiments: Some developments over the past fifteen years. *Annual review of psychology*, 45(1), 545-580.
- Corcoran, R. P., & Tormey, R. (2012). How emotionally intelligent are pre-service teachers? *Teaching and Teacher Education*, 28(5), 750-759.
- Costa, A., & Faria, L. (2018). Implicit theories of intelligence and academic achievement: A meta-analytic review. *Frontiers in psychology*, 9, 829.
- Creswell, J. D. (2017). Mindfulness interventions. *Annual review of psychology*, 68, 491-516.
- Creswell, J. W. (1999). Mixed-method research: Introduction and application. In *Handbook of educational policy* (pp. 455-472). Academic Press.
- Creswell, J. W., & Plano, C. V. L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, Calif: SAGE Publications.
- Creswell, J. W., Klassen, A. C., Plano Clark, V. L., & Smith, K. C. (2011). Best practices for mixed methods research in the health sciences. *Bethesda (Maryland): National Institutes of Health*, 2013, 541-545.

- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). An expanded typology for classifying mixed methods research into designs. *A. Tashakkori y C. Teddlie, Handbook of mixed methods in social and behavioral research*, 209-240.
- Crombie, D., Lombard, C., & Noakes, T. (2011). Increasing emotional intelligence in cricketers: An intervention study. *International Journal of Sports Science & Coaching*, 6(1), 69-86.
- Cross, D. I., & Hong, J. Y. (2012). An ecological examination of teachers' emotions in the school context. *Teaching and Teacher Education*, 28(7), 957-967.
- Csikszentmihalyi, M., & Seligman, M. (2000). Positive psychology. *American Psychologist*, 55(1), 5-14.
- Curci, A., Lanciano, T., Soleti, E., Zammuner, V. L., & Salovey, P. (2013). Construct validity of the Italian version of the Mayer–Salovey–Caruso emotional intelligence test (MSCEIT) v2.0. *Journal of personality assessment*, 95(5), 486-494.
- Cury, F., Elliot, A. J., Da Fonseca, D., & Moller, A. C. (2006). The social-cognitive model of achievement motivation and the 2× 2 achievement goal framework. *Journal of personality and social psychology*, 90(4), 666.
- D'Amico, A., Geraci, A., & Tarantino, C. (2020). The relationship between perceived emotional intelligence, work engagement, job satisfaction, and burnout in Italian school teachers: an exploratory study. *Psihologijske teme*, 29(1), 63-84.
- Dahl-Jørgensen, C., & Saksvik, P. Ø. (2005). The impact of two organizational interventions on the health of service sector workers. *International Journal of Health Services*, 35(3), 529-549.
- Dash, S., & Pradhan, R. K. (2014). Determinants and consequences of organizational citizenship behavior: A theoretical framework for Indian manufacturing organisations. *International Journal of Business and Management Invention*, 3(1), 17-27.
- Dassa, L., & Derose, D. S. (2017). Get in the Teacher Zone: A Perception Study of Preservice Teachers and Their Teacher Identity. *Issues in Teacher Education*, 26(1), 101-113.

- Day, A. L., & Carroll, S. A. (2004). Using an ability-based measure of emotional intelligence to predict individual performance, group performance, and group citizenship behaviours. *Personality and Individual Differences, 36*(6), 1443-1458.
- Day, A. L., & Carroll, S. A. (2004). Using an ability-based measure of emotional intelligence to predict individual performance, group performance, and group citizenship behaviours. *Personality and Individual Differences, 36*(6), 1443-1458.
- De Castella, K., & Byrne, D. (2015). My intelligence may be more malleable than yours: The revised implicit theories of intelligence (self-theory) scale is a better predictor of achievement, motivation, and student disengagement. *European Journal of Psychology of Education, 30*(3), 245-267.
- De Castella, K., Goldin, P., Jazaieri, H., Ziv, M., Dweck, C. S., & Gross, J. J. (2013). Beliefs about emotion: Links to emotion regulation, well-being, and psychological distress. *Basic and applied social psychology, 35*(6), 497-505.
- De Clercq, D., Bouckennooghe, D., Raja, U., & Matsyborska, G. (2014). Unpacking the goal congruence–organizational deviance relationship: The roles of work engagement and emotional intelligence. *Journal of Business Ethics, 124*(4), 695-711.
- De France, K., & Hollenstein, T. (2021). Implicit theories of emotion and mental health during adolescence: the mediating role of emotion regulation. *Cognition and Emotion, 35*(2), 367-374.
- de Lange, A. H., Van Yperen, N. W., Van der Heijden, B. I., & Bal, P. M. (2010). Dominant achievement goals of older workers and their relationship with motivation-related outcomes. *Journal of vocational behavior, 77*(1), 118-125.
- De Simone, S., Cicotto, G., & Lampis, J. (2016). Occupational stress, job satisfaction and physical health in teachers. *European Review of Applied Psychology, 66*(2), 65-77.

- DeBacker, T. K., Heddy, B. C., Kershen, J. L., Crowson, H. M., Looney, K., & Goldman, J. A. (2018). Effects of a one-shot growth mindset intervention on beliefs about intelligence and achievement goals. *Educational Psychology, 38*(6), 711-733.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied psychology, 86*(3), 499.
- den Brok, P., Wubbels, T., & Van Tartwijk, J. (2017). Exploring beginning teachers' attrition in the Netherlands. *Teachers and teaching, 23*(8), 881-895.
- Devine, D., Fahie, D., & McGillicuddy, D. (2013). What is 'good' teaching? Teacher beliefs and practices about their teaching. *Irish Educational Studies, 32*(1), 83-108.
- Dewi, L. R., & Kartowagiran, B. (2018). An evaluation of internship program by using Kirkpatrick evaluation model. *REID (Research and Evaluation in Education), 4*(2), 155-163.
- Di Fabio, A., & Saklofske, D. H. (2014). Comparing ability and self-report trait emotional intelligence, fluid intelligence, and personality traits in career decision. *Personality and Individual Differences, 64*, 174-178.
- Di, M., Deng, X., Zhao, J., & Kong, F. (2020). Psychometric Properties and Measurement Invariance Across Sex of the Wong and Law Emotional Intelligence Scale in Chinese adolescents. *Psychological Reports, 0033294120972634*.
- Dickhäuser, O., Dinger, F. C., Janke, S., Spinath, B., & Steinmayr, R. (2016). A prospective correlational analysis of achievement goals as mediating constructs linking distal motivational dispositions to intrinsic motivation and academic achievement. *Learning and Individual Differences, 50*, 30-41.
- DiPaola, M. F., & Hoy, W. K. (2005). Organizational citizenship of faculty and achievement of high school students. *The high school journal, 88*(3), 35-44.
- Dipaola, M., & Tschannen-Moran, M. (2001). Organizational citizenship behavior in schools and its relationship to school climate. *Journal of school Leadership, 11*(5), 424-447.

- Diseth, Å., Meland, E., & Breidablik, H. J. (2014). Self-beliefs among students: Grade level and gender differences in self-esteem, self-efficacy and implicit theories of intelligence. *Learning and Individual Differences, 35*, 1-8.
- Dolev, N., & Leshem, S. (2017). Developing emotional intelligence competence among teachers. *Teacher development, 21*(1), 21-39.
- Donaldson, S. I., & Ko, I. (2010). Positive organizational psychology, behavior, and scholarship: A review of the emerging literature and evidence base. *The Journal of Positive Psychology, 5*(3), 177-191.
- Donaldson, S. I., Dollwet, M., & Rao, M. A. (2015). Happiness, excellence, and optimal human functioning revisited: Examining the peer-reviewed literature linked to positive psychology. *The Journal of Positive Psychology, 10*(3), 185-195.
- Donohoe, C., Topping, K., & Hannah, E. (2012). The impact of an online intervention (Brainology) on the mindset and resiliency of secondary school pupils: a preliminary mixed methods study. *Educational Psychology, 32*(5), 641-655.
- Doyle, O., & Hickey, C. (2013). The challenges of contamination in evaluations of childhood interventions. *Evaluation, 19*(2), 183-194.
- Drost, E. A. (2011). Validity and reliability in social science research. *Education Research and perspectives, 38*(1), 105-123.
- Durlak, J. A. (Ed.). (2015). *Handbook of social and emotional learning: Research and practice*. Guilford Publications.
- Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American journal of community psychology, 41*(3), 327-350.
- Dweck, C. (2015). Carol Dweck revisits the growth mindset. *Education Week, 35*(5), 20-24.

- Dweck, C. S. (1986). Motivational processes affecting learning. *American psychologist*, *41*(10), 1040.
- Dweck, C. S. (2008). *Mindset: The new psychology of success*. Random House Digital, Inc..
- Dweck, C. S. (2012). Mindsets and human nature: Promoting change in the Middle East, the schoolyard, the racial divide, and willpower. *American Psychologist*, *67*(8), 614.
- Dweck, C. S. (2014). *Mindsets and math/science achievement*. New York: Carnegie Corporation of New York, Institute for Advanced Study, Commission on Mathematics and Science Education.
- Dweck, C. S. (2017). The journey to children's mindsets—and beyond. *Child Development Perspectives*, *11*(2), 139-144.
- Dweck, C. S., & Henderson, V. L. (1988). Theories of intelligence: Background and measures. Unpublished manuscript
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological review*, *95*(2), 256.
- Dweck, C. S., & Molden, D. C. (2000). Self theories. *Handbook of competence and motivation*, 122-140.
- Dweck, C. S., & Yeager, D. S. (2019). Mindsets: A view from two eras. *Perspectives on Psychological science*, *14*(3), 481-496.
- Dweck, C. S., Chiu, C. Y., & Hong, Y. Y. (1995). Implicit theories and their role in judgments and reactions: A word from two perspectives. *Psychological inquiry*, *6*(4), 267-285.
- Dweck, C.S., & Master, A. (2008). Self-theories motivate self-regulated learning. In D.H. Schunk & B.J. Zimmerman (Eds.), *Motivation and self-regulated learning: Theory, research, and applications* (p. 31–51). Lawrence Erlbaum Associates Publishers.
- Easton, G. (2010). Critical realism in case study research. *Industrial marketing management*, *39*(1), 118-128.

- El Ghoudani, K., Pulido-Martos, M., & Lopez-Zafra, E. (2018). Measuring emotional intelligence in Moroccan Arabic: the Wong and Law Emotional Intelligence Scale/Medidas de la inteligencia emocional en árabe marroquí: la Escala de Inteligencia Emocional de Wong y Law. *Revista de Psicología Social*, 33(1), 174-194.
- Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational psychologist*, 34(3), 169-189.
- Elliot, A. J., & McGregor, H. A. (2001). A 2×2 achievement goal framework. *Journal of personality and social psychology*, 80(3), 501.
- Emami, M., Alizadeh, Z., Nazari, K., & Darvishi, S. (2012). Antecedents and consequences of organisational citizenship behaviour (OCB). *Interdisciplinary journal of contemporary research in business*, 3(9).
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, 5(1), 1-4.
- Evans, R., Murphy, S., & Scourfield, J. (2015). Implementation of a school-based social and emotional learning intervention: understanding diffusion processes within complex systems. *Prevention Science*, 16(5), 754-764.
- Extremera Pacheco, N., Rey Peña, L., & Sánchez Álvarez, N. (2019). Validation of the Spanish version of the Wong Law emotional intelligence scale (WLEIS-S). *Psicothema*.
- Extremera, N., Mérida-López, S., Sánchez-Álvarez, N., & Quintana-Orts, C. (2018). How does emotional intelligence make one feel better at work? The mediational role of work engagement. *International journal of environmental research and public health*, 15(9), 1909.
- Farrelly, D., & Austin, E. J. (2007). Ability EI as an intelligence? Associations of the MSCEIT with performance on emotion processing and social tasks and with cognitive ability. *Cognition and Emotion*, 21(5), 1043-1063.
- Farris, D. (2018). Organisational citizenship behaviour in university administrative committees. *Journal of Higher Education Policy and Management*, 40(3), 224-238.



- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G\* Power 3.1: Tests for correlation and regression analyses. *Behavior research methods*, *41*(4), 1149-1160.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G\* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior research methods*, *39*(2), 175-191.
- Fernández-Abascal, E. G., & Martín-Díaz, M. D. (2015). Dimensions of emotional intelligence related to physical and mental health and to health behaviors. *Frontiers in psychology*, *6*, 317.
- Fernández-Berrocal, P., & Extremera, N. (2016). Ability emotional intelligence, depression, and well-being. *Emotion Review*, *8*(4), 311-315.
- Fernet, C., Guay, F., Senécal, C., & Austin, S. (2012). Predicting intraindividual changes in teacher burnout: The role of perceived school environment and motivational factors. *Teaching and teacher education*, *28*(4), 514-525.
- Field, A. (2009). *Discovering statistics using IBM SPSS* (3<sup>rd</sup> ed.). Sage.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics: And Sex and Drugs and Rock 'N' Roll*, (4<sup>th</sup> ed.). Sage.
- Fiorilli, C., Benevene, P., De Stasio, S., Buonomo, I., Romano, L., Pepe, A., & Addimando, L. (2019). Teachers' burnout: the role of trait emotional intelligence and social support. *Frontiers in psychology*, *10*, 2743.
- Florescu, M. S., & Nastase, M. (2014). The effects of transformational leadership and emotional intelligence of managers on organizational citizenship behaviors of employees. *Revista de Management Comparat International*, *15*(4), 385.
- Ford, B. Q., Lwi, S. J., Gentzler, A. L., Hankin, B., & Mauss, I. B. (2018). The cost of believing emotions are uncontrollable: Youths' beliefs about emotion predict emotion regulation and depressive symptoms. *Journal of Experimental Psychology: General*, *147*(8), 1170.

- Frederickson, B.L., & Cohn, M.A. (2008). Positive emotions. In M. Lewis, J.M. Haviland-Jones, & L.F. Feldman Barrett (Eds.), *Handbook of emotions* (3rd ed., pp. 777-96). London: The Guilford Press.
- Frederickson, B. L. (1998). What good are positive emotions? *Review of general psychology*, 2(3), 300-319.
- Frederickson, B. L. (2003). The value of positive emotions: The emerging science of positive psychology is coming to understand why it's good to feel good. *American scientist*, 91(4), 330-335.
- Frederickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, 359(1449), 1367-1377.
- Frederickson, B. L. (2013). Positive emotions broaden and build. In *Advances in experimental social psychology* (Vol. 47, pp. 1-53). Academic Press.
- Frederickson, B. L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition & emotion*, 19(3), 313-332.
- Frees, E. W. (2004). *Longitudinal and panel data: analysis and applications in the social sciences*. Cambridge University Press.
- Frenzel, A. C., Becker-Kurz, B., Pekrun, R., & Goetz, T. (2015). Teaching this class drives me nuts!-Examining the person and context specificity of teacher emotions. *PloS one*, 10(6), e0129630.
- Frenzel, A. C., Pekrun, R., Goetz, T., Daniels, L. M., Durksen, T. L., Becker-Kurz, B., & Klassen, R. M. (2016). Measuring teachers' enjoyment, anger, and anxiety: The Teacher Emotions Scales (TES). *Contemporary Educational Psychology*, 46, 148-163.
- Fukuda, E., Saklofske, D. H., Tamaoka, K., & Lim, H. (2012). Factor structure of the Korean version of Wong and Law's Emotional Intelligence Scale. *Assessment*, 19(1), 3-7.

- Fukuda, E., Saklofske, D. H., Tamaoka, K., Fung, T. S., Miyaoka, Y., & Kiyama, S. (2011). Factor structure of Japanese versions of two emotional intelligence scales. *International Journal of Testing, 11*(1), 71-92.
- Gabryś-Barker, D., & Gałajda, D. (Eds.). (2016). *Positive psychology perspectives on foreign language learning and teaching*. New York: Springer.
- Gao, Y., Shi, J., Niu, Q., & Wang, L. (2013). Work–family conflict and job satisfaction: Emotional intelligence as a moderator. *Stress and Health, 29*(3), 222-228.
- Garvis, S., & Pendergast, D. (2011). An investigation of early childhood teacher self-efficacy beliefs in the teaching of arts education. *International journal of education & the arts, 12*(9), 1-15.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference, 11.0 update (4<sup>th</sup> ed.)*. Boston: Allyn & Bacon.
- Ghawadra, S. F., Abdullah, K. L., Choo, W. Y., & Phang, C. K. (2019). Mindfulness-based stress reduction for psychological distress among nurses: A systematic review. *Journal of clinical nursing, 28*(21-22), 3747-3758.
- Gignac, G. E., Palmer, B. R., Manocha, R., & Stough, C. (2005). An examination of the factor structure of the Schutte self-report emotional intelligence (SSREI) scale via confirmatory factor analysis. *Personality and Individual Differences, 39*(6), 1029-1042.
- Glomb, T. M., Bhave, D. P., Miner, A. G., & Wall, M. (2011). Doing good, feeling good: Examining the role of organizational citizenship behaviors in changing mood. *Personnel Psychology, 64*(1), 191-223.
- Goldenberg, I., Matheson, K., & Mantler, J. (2006). The assessment of emotional intelligence: A comparison of performance-based and self-report methodologies. *Journal of personality assessment, 86*(1), 33-45.
- Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.
- Goleman, D. (1998). The emotional intelligence of leaders. *Leader to leader, 1998*(10), 20-26.

- Goleman, D. (2001). An EI-based theory of performance. *The emotionally intelligent workplace: How to select for, measure, and improve emotional intelligence in individuals, groups, and organizations*, 1(1), 27-44.
- Goleman, D. P. (1995). Emotional intelligence: Why it can matter more than IQ for character, health and lifelong achievement. New York: Bantam Books.
- Gonida, E., Kiosseoglou, G., & Leondari, A. (2006). Implicit theories of intelligence, perceived academic competence, and school achievement: Testing alternative models. *The American journal of psychology*, 223-238.
- Good, C., Aronson, J., & Inzlicht, M. (2003). Improving adolescents' standardized test performance: An intervention to reduce the effects of stereotype threat. *Journal of Applied Developmental Psychology*, 24(6), 645-662.
- Granziera, H., & Perera, H. N. (2019). Relations among teachers' self-efficacy beliefs, engagement, and work satisfaction: A social cognitive view. *Contemporary Educational Psychology*, 58, 75-84.
- Gravetter, F. J., & Forzano, L. A. B. (2018). *Research methods for the behavioral sciences*. Cengage Learning.
- Green Jr, P. I., Finkel, E. J., Fitzsimons, G. M., & Gino, F. (2017). The energizing nature of work engagement: Toward a new need-based theory of work motivation. *Research in Organizational Behavior*, 37, 1-18.
- Green, S. B. (1991). How many subjects does it take to do a regression analysis. *Multivariate behavioral research*, 26(3), 499-510.
- Greene, J. A., Costa, L. J., Robertson, J., Pan, Y., & Deekens, V. M. (2010). Exploring relations among college students' prior knowledge, implicit theories of intelligence, and self-regulated learning in a hypermedia environment. *Computers & Education*, 55(3), 1027-1043.

- Griffin, T. L., Clarke, J. L., Lancashire, E. R., Pallan, M. J., & Adab, P. (2017). Process evaluation results of a cluster randomised controlled childhood obesity prevention trial: the WAVES study. *BMC Public Health, 17*(1), 1-13.
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of general psychology, 2*(3), 271-299.
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology, 39*(3), 281-291.
- Gross, J. J. (2008). Emotion regulation. *Handbook of emotions, 3*(3), 497-513.
- Gross, J. J. (2013). Emotion regulation: taking stock and moving forward. *Emotion, 13*(3), 359.
- Groth, S. W. (2010). Honorarium or coercion: use of incentives for participants in clinical research. *The Journal of the New York State Nurses' Association, 41*(1), 11.
- Groves, K. S., McEnrue, M. P., & Shen, W. (2008). Developing and measuring the emotional intelligence of leaders. *Journal of Management Development.*
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research, 2*(163-194), 105.
- Gulati, S., & Taneja, U. (2013). Speciality Healthcare in India: A Research Design Review of Mixed Methods Approach. *Journal of Business Management & Social Sciences Research, 2*(10), 49-56.
- Gunderson, E. A., Gripshover, S. J., Romero, C., Dweck, C. S., Goldin-Meadow, S., & Levine, S. C. (2013). Parent praise to 1-to 3-year-olds predicts children's motivational frameworks 5 years later. *Child development, 84*(5), 1526-1541.
- Gusy, B., Lesener, T., & Wolter, C. (2019). Measuring Well-Being With the Utrecht Work Engagement Scale–Student Form. *European Journal of Health Psychology.*
- Guthrie, J. T., & Dreher, M. J. (2000). Why Teacher Engagement Is Important. *Engaging young readers: Promoting achievement and motivation, 309.*

- Gutiérrez-Cobo, M. J., Cabello, R., & Fernández-Berrocal, P. (2016). The relationship between emotional intelligence and cool and hot cognitive processes: a systematic review. *Frontiers in behavioral neuroscience, 10*, 101.
- Haga, S. M., Kraft, P., & Corby, E. K. (2009). Emotion regulation: Antecedents and well-being outcomes of cognitive reappraisal and expressive suppression in cross-cultural samples. *Journal of happiness studies, 10*(3), 271-291.
- Hagenauer, G., Hascher, T., & Volet, S. E. (2015). Teacher emotions in the classroom: associations with students' engagement, classroom discipline and the interpersonal teacher-student relationship. *European journal of psychology of education, 30*(4), 385-403.
- Hair Jr, J. F., Babin, B. J., & Krey, N. (2017). Covariance-based structural equation modeling in the Journal of Advertising: Review and recommendations. *Journal of Advertising, 46*(1), 163-177.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). New York: Prentice Hall.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2014). *Multivariate data analysis* (7<sup>th</sup> ed.). Pearson Education Limited Harlow, Essex.
- Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of school psychology, 43*(6), 495-513.
- Halbesleben, J. R. (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources, and consequences. *Work engagement: A handbook of essential theory and research, 8*(1), 102-117.
- Halbesleben, J. R. (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources, and consequences. *Work engagement: A handbook of essential theory and research, 8*(1), 102-117.
- Halcomb E, Hickman L. (2015). Mixed methods research. *Nursing Standard: promoting excellence in nursing care, 29* (32):41-47.

- Handley, M. A., Lyles, C. R., McCulloch, C., & Cattamanchi, A. (2018). Selecting and improving quasi-experimental designs in effectiveness and implementation research. *Annual review of public health, 39*, 5-25.
- Hargreaves, A. (1998). The emotional practice of teaching. *Teaching and Teacher Education, 14*(8), 835–854. [https://doi.org/10.1016/S0742-051X\(98\)00025-0](https://doi.org/10.1016/S0742-051X(98)00025-0)
- Hargreaves, A. (2000). Mixed emotions: Teachers' perceptions of their interactions with students. *Teaching and teacher education, 16*(8), 811-826.
- Hargreaves, A. (2001). Emotional geographies of teaching. *Teachers college record, 103*(6), 1056-1080.
- Harms, P. D., & Credé, M. (2010). Remaining issues in emotional intelligence research: Construct overlap, method artifacts, and lack of incremental validity. *Industrial and Organizational Psychology, 3*(2), 154-158.
- Harmsen, R., Helms-Lorenz, M., Maulana, R., & van Veen, K. (2018). The relationship between beginning teachers' stress causes, stress responses, teaching behaviour and attrition. *Teachers and Teaching, 24*(6), 626-643.
- Harper, P. J. (2015). Exploring forms of organizational citizenship behaviors (OCB): antecedents and outcomes. *Journal of Management and Marketing Research, 18*, 1.
- Havermans, B. M., Schelvis, R. M., Boot, C. R., Brouwers, E. P., Anema, J. R., & van der Beek, A. J. (2016). Process variables in organizational stress management intervention evaluation research: a systematic review. *Scandinavian journal of work, environment & health, 371-381*.
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication monographs, 76*(4), 408-420.
- Hebb, D. O. (1949). The first stage of perception: growth of the assembly. *The Organization of Behavior, 4*, 60-78.

- Heggstad, E. D. (2008). A Really Big Picture View of Social Intelligence: Social Intelligence: The New Science of Human Relationships. Goleman, D. New York: Bantam Dell, 2006. 403pp. ISBN: 0-553-80352-2, \$28. *Journal of personality assessment*, 90(1), 102-104.
- Hen, M., & Sharabi-Nov, A. (2014). Teaching the teachers: Emotional intelligence training for teachers. *Teaching education*, 25(4), 375-390.
- Henderson, K. A. (2011). Post-positivism and the pragmatics of leisure research. *Leisure Sciences*, 33(4), 341-346.
- Herpertz, S., Schütz, A., & Nezlek, J. (2016). Enhancing emotion perception, a fundamental component of emotional intelligence: Using multiple-group SEM to evaluate a training program. *Personality and Individual Differences*, 95, 11-19.
- Heslin, P. A. (2010). Mindsets and employee engagement: Theoretical linkages and practical interventions. In *Handbook of employee engagement*. Edward Elgar Publishing.
- Heslin, P. A., & VandeWalle, D. (2011). Performance appraisal procedural justice: The role of a manager's implicit person theory. *Journal of management*, 37(6), 1694-1718.
- Heslin, P. A., Latham, G. P., & VandeWalle, D. (2005). The effect of implicit person theory on performance appraisals. *Journal of Applied Psychology*, 90(5), 842.
- Heslin, P. A., Vandewalle, D. O. N., & Latham, G. P. (2006). Keen to help? Managers' implicit person theories and their subsequent employee coaching. *Personnel psychology*, 59(4), 871-902.
- Heyns, M. M., McCallaghan, S., & Senne, O. W. (2021). Supervisor support and work engagement: The mediating role of psychological safety in a post-restructuring business organisation. *Journal of Psychology in Africa*, 31(2), 140-144.
- Hill, C. L., & Updegraff, J. A. (2012). Mindfulness and its relationship to emotional regulation. *Emotion*, 12(1), 81.



- Hmelo-Silver, C. E. (2003). Analyzing collaborative knowledge construction: Multiple methods for integrated understanding. *Computers & Education, 41*(4), 397-420.
- Hobfoll, S. E., Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of personality and social psychology, 84*(3), 632.
- Hong, Y. Y., Chiu, C. Y., Dweck, C. S., Lin, D. M. S., & Wan, W. (1999). Implicit theories, attributions, and coping: a meaning system approach. *Journal of Personality and Social psychology, 77*(3), 588.
- Horton-Deutsch, S. A. R. A., & Sherwood, G. (2008). Reflection: an educational strategy to develop emotionally-competent nurse leaders. *Journal of nursing management, 16*(8), 946-954.
- Howe, A., Keogh-Brown, M., Miles, S., & Bachmann, M. (2007). Expert consensus on contamination in educational trials elicited by a Delphi exercise. *Medical Education, 41*(2), 196-204.
- Howell, A. J. (2016). Implicit theories of personal and social attributes: Fundamental mindsets for a science of wellbeing. *International Journal of Wellbeing, 6*(3).
- Howell, K. E. (2013). Empiricism, positivism and post-positivism. *Howell, KE An introduction to the philosophy of methodology, 32-54.*
- <https://doi.org/10.1136/bmj.h1258>
- Hu, L. T., Bentler, P. M., & Kano, Y. (1992). Can test statistics in covariance structure analysis be trusted? *Psychological bulletin, 112*(2), 351.
- Hu, L.-T., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 76–99). Sage Publications, Inc.
- Hudson, J., Fielding, S., & Ramsay, C. R. (2019). Methodology and reporting characteristics of studies using interrupted time series design in healthcare. *BMC medical research methodology, 19*(1), 1-7.

- Hughes, J. S. (2015). Support for the domain specificity of implicit beliefs about persons, intelligence, and morality. *Personality and Individual Differences, 86*, 195-203.
- Hulscher, M. E. J. L., Laurant, M. G. H., & Grol, R. P. T. M. (2003). Process evaluation on quality improvement interventions. *BMJ Quality & Safety, 12*(1), 40-46.
- Iliceto, P., & Fino, E. (2017). The Italian version of the Wong-Law Emotional Intelligence Scale (WLEIS-I): A second-order factor analysis. *Personality and Individual Differences, 116*, 274-280.
- Iqbal, H. K., Aziz, U., & Tasawar, A. (2012). Impact of organizational justice on organizational citizenship behavior: An empirical evidence from Pakistan. *World Applied Sciences Journal, 19*(9), 1348-1354.
- Isenbarger, L., & Zembylas, M. (2006). The emotional labour of caring in teaching. *Teaching and teacher education, 22*(1), 120-134.
- Izard, C. E. (2013). *Human emotions*. Springer Science & Business Media.
- Jackson, J. C. (2009). *Organizational citizenship behaviors, collective teacher efficacy, and student achievement in elementary schools*. The College of William and Mary.
- Jaeger, A. J. (2003). Job competencies and the curriculum: An inquiry into emotional intelligence in graduate professional education. *Research in higher education, 44*(6), 615-639.
- Jafrani, N. Z. S. (2014). Myers-Briggs Type Indicator (MBTI)-Applications in. *Pakistan Journal of Medicine and Dentistry, 3*(02), 1-2.
- Johns, G. (2006). The essential impact of context on organizational behavior. *Academy of management review, 31*(2), 386-408.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher, 33*(7), 14-26.
- Jones, B. D., Bryant, L. H., Snyder, J. D., & Malone, D. (2012). Preservice and inservice teachers' implicit theories of intelligence. *Teacher Education Quarterly, 39*(2), 87-101.

- Jordan, P. J., Dasborough, M. T., Daus, C. S., & Ashkanasy, N. M. (2010). A call to context. *Industrial and Organizational Psychology*, 3(2), 145-148.
- Joseph, D. L., & Newman, D. A. (2010). Emotional intelligence: an integrative meta-analysis and cascading model. *Journal of applied psychology*, 95(1), 54.
- Ju, C., Lan, J., Li, Y., Feng, W., & You, X. (2015). The mediating role of workplace social support on the relationship between trait emotional intelligence and teacher burnout. *Teaching and teacher education*, 51, 58-67.
- Jurewicz, M. M. (2004). Organizational citizenship behaviors of middle school teachers: A study of their relationship to school climate and student achievement.
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: past, present, and future.
- Kafetsios, K., & Zampetakis, L. A. (2008). Emotional intelligence and job satisfaction: Testing the mediatory role of positive and negative affect at work. *Personality and individual differences*, 44(3), 712-722.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of management journal*, 33(4), 692-724.
- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1), 31-36.
- Kanonuhwa, M., Rungani, E. C., & Chimucheka, T. (2018). The association between emotional intelligence and entrepreneurship as a career choice: A study on university students in South Africa. *SA Journal of Human Resource Management*, 16(1), 1-9.
- Kanste, O. (2011). Work engagement, work commitment and their association with well-being in health care. *Scandinavian journal of caring sciences*, 25(4), 754-761.
- Kappes, A., & Schikowski, A. (2013). Implicit theories of emotion shape regulation of negative affect. *Cognition & emotion*, 27(5), 952-960.
- Karakuş, M. (2013). Emotional intelligence and negative feelings: a gender specific moderated mediation model. *Educational Studies*, 39(1), 68-82.

- Karim, J. (2010). Examining the factor structure of Wong and Law's Emotional Intelligence Scale with a Pakistani general population sample. *The IUP Journal of Organizational Behavior*, 9(1), 32-44.
- Karim, J. (2010). Examining the factor structure of Wong and Law's Emotional Intelligence Scale with a Pakistani general population sample. *The IUP Journal of Organizational Behavior*, 9(1), 32-44.
- Katz, D. (1964). The motivational basis of organizational behavior. *Behavioral science*, 9(2), 131-146.
- Keating, L. A., & Heslin, P. A. (2015). The potential role of mindsets in unleashing employee engagement. *Human Resource Management Review*, 25(4), 329-341.
- Keller, M. M., Frenzel, A. C., Goetz, T., Pekrun, R., & Hensley, L. (2014). *Exploring teacher emotions: A literature review and an experience sampling study* (pp. 69-82). Routledge.
- Khalili, A. (2017). Transformational leadership and organizational citizenship behavior: The moderating role of emotional intelligence. *Leadership & Organization Development Journal*.
- King, R. B. (2012). How you think about your intelligence influences how adjusted you are: Implicit theories and adjustment outcomes. *Personality and Individual Differences*, 53(5), 705-709.
- King, R. B. (2016). A fixed mindset leads to negative affect. *Zeitschrift für Psychologie*.
- King, R. B., & dela Rosa, E. D. (2019). Are your emotions under your control or not? Implicit theories of emotion predict well-being via cognitive reappraisal. *Personality and individual differences*, 138, 177-182.
- King, R. B., McInerney, D. M., & Watkins, D. A. (2012). How you think about your intelligence determines how you feel in school: The role of theories of intelligence on academic emotions. *Learning and Individual Differences*, 22(6), 814-819.
- Kirk, R. E. (2012). *Experimental design: Procedures for the behavioral sciences*. Sage Publications.
- Kirkpatrick, D. (2013). Kirkpatrick four levels. *Newnan: Kirkpatrick Partners*, 201, 22-3.

- Kirkpatrick, D., & Kirkpatrick, J. (2006). *Evaluating training programs: The four levels*. Berrett-Koehler Publishers.
- Kirkpatrick, J. D., & Kirkpatrick, W. K. (2016). *Kirkpatrick's four levels of training evaluation*. Association for Talent Development.
- Klassen, R. M., & Tze, V. M. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *Educational research review, 12*, 59-76.
- Klassen, R. M., Aldhafri, S., Mansfield, C. F., Purwanto, E., Siu, A. F., Wong, M. W., & Woods-McConney, A. (2012). Teachers' engagement at work: An international validation study. *The journal of experimental education, 80*(4), 317-337.
- Klassen, R., Wilson, E., Siu, A. F., Hannok, W., Wong, M. W., Wongsri, N., ... & Jansem, A. (2013). Preservice teachers' work stress, self-efficacy, and occupational commitment in four countries. *European journal of psychology of education, 28*(4), 1289-1309.
- Kline, R. B. (2011). Convergence of structural equation modeling and multilevel modeling.
- Koçoğlu, Z. (2011). Emotional intelligence and teacher efficacy: A study of Turkish EFL pre-service teachers. *Teacher Development, 15*(4), 471-484.
- Kolar, D. W., Funder, D. C., & Colvin, C. R. (1996). Comparing the accuracy of personality judgments by the self and knowledgeable others. *Journal of personality, 64*(2), 311-337.
- Komarraju, M., & Nadler, D. (2013). Self-efficacy and academic achievement: Why do implicit beliefs, goals, and effort regulation matter?. *Learning and individual differences, 25*, 67-72.
- Kong, F. (2017). The validity of the Wong and Law Emotional Intelligence Scale in a Chinese sample: Tests of measurement invariance and latent mean differences across gender and age. *Personality and Individual Differences, 116*, 29-31.
- Kooken, J., Welsh, M. E., McCoach, D. B., Miller, F. G., Chafouleas, S. M., Riley-Tillman, T. C., & Fabiano, G. (2017). Test order in teacher-rated behavior assessments: Is counterbalancing necessary?. *Psychological assessment, 29*(1), 98.

- Koopman, J., Lanaj, K., & Scott, B. A. (2016). Integrating the bright and dark sides of OCB: A daily investigation of the benefits and costs of helping others. *Academy of Management Journal*, 59(2), 414-435.
- Kornacki, S. A., & Caruso, D. R. (2007). A theory-based, practical approach to emotional intelligence training: Ten ways to increase emotional skills. *Applying emotional intelligence: A practitioner's guide*, 53-88.
- Kotsou, I., Mikolajczak, M., Heeren, A., Grégoire, J., & Leys, C. (2019). Improving emotional intelligence: A systematic review of existing work and future challenges. *Emotion Review*, 11(2), 151-165.
- Kumar, M. M., & Shah, S. A. (2015). Psychometric properties of Podsakoff's organizational citizenship behaviour scale in the Asian context. *The International Journal of Indian Psychology*, 3(1), 51-60.
- Kyriazos, T. A. (2018). Applied psychometrics: sample size and sample power considerations in factor analysis (EFA, CFA) and SEM in general. *Psychology*, 9(08), 2207.
- Landy, F. J. (2005). Some historical and scientific issues related to research on emotional intelligence. *Journal of organizational Behavior*, 26(4), 411-424.
- Langenberg, B., Helm, J. L., & Mayer, A. (2020). Repeated Measures ANOVA with Latent Variables to Analyze Interindividual Differences in Contrasts. *Multivariate Behavioral Research*, 1-19.
- Latif, H., Majoka, M. I., & Khan, M. I. (2017). Emotional intelligence and job performance of high school female teachers. *Pakistan Journal of Psychological Research*, 333-351.
- Law, K. S., Wong, C. S., & Song, L. J. (2004). The construct and criterion validity of emotional intelligence and its potential utility for management studies. *Journal of applied Psychology*, 89(3), 483.
- Law, K. S., Wong, C. S., Huang, G. H., & Li, X. (2008). The effects of emotional intelligence on job performance and life satisfaction for the research and development scientists in China. *Asia Pacific Journal of Management*, 25(1), 51-69.

- Lazauskaitė-Zabielskė, J., Urbanavičiūtė, I., & Balsienė, R. R. (2019). The Structure of Work Engagement. *European Journal of Psychological Assessment*.
- Lee, H. J. (2005). Understanding and assessing preservice teachers' reflective thinking. *Teaching and teacher education, 21*(6), 699-715.
- Lee, U. H., Kim, H. K., & Kim, Y. H. (2013). Determinants of Organizational Citizenship Behavior and Its Outcomes. *Global Business & Management Research, 5*(1).
- Lei, P. W., & Shiverdecker, L. K. (2020). Performance of estimators for confirmatory factor analysis of ordinal variables with missing data. *Structural Equation Modeling: A Multidisciplinary Journal, 27*(4), 584-601.
- Leiter, M. P., & Bakker, A. B. (2010). Work engagement: introduction. *Work engagement: A handbook of essential theory and research, 1-9*.
- Li, S., Zhao, F., & Yu, G. (2019). Ostracism and aggression among adolescents: Implicit theories of personality moderated the mediating effect of self-esteem. *Children and Youth Services Review, 100*, 105-111.
- Li, T., Saklofske, D. H., Bowden, S. C., Yan, G., & Fung, T. S. (2012). The measurement invariance of the Wong and Law Emotional Intelligence Scale (WLEIS) across three Chinese university student groups from Canada and China. *Journal of Psychoeducational Assessment, 30*(4), 439-452.
- Libbrecht, N., Beuckelaer, A. D., Lievens, F., & Rockstuhl, T. (2014). Measurement invariance of the Wong and Law Emotional Intelligence Scale scores: Does the measurement structure hold across far Eastern and European countries?. *Applied Psychology, 63*(2), 223-237.
- Libbrecht, N., Lievens, F., & Schollaert, E. (2010). Measurement equivalence of the Wong and Law Emotional Intelligence Scale across self and other ratings. *Educational and Psychological Measurement, 70*(6), 1007-1020.

- Liebermann, S., & Hoffmann, S. (2008). The impact of practical relevance on training transfer: evidence from a service quality training program for German bank clerks. *International Journal of Training and Development*, 12(2), 74-86.
- Linnan L and Steckler A (2002) Process evaluation for public health interventions and research. San Francisco, CA: Jossey-Bass, 1–24.
- Locke, E. A. (2005). Why emotional intelligence is an invalid concept. *Journal of organizational Behavior*, 26(4), 425-431.
- Lopes, P. N., Côté, S., & Salovey, P. (2006). An Ability Model of Emotional Intelligence: Implications for Assessment and Training.
- López-Domínguez, M., Enache, M., Sallan, J. M., & Simo, P. (2013). Transformational leadership as an antecedent of change-oriented organizational citizenship behavior. *Journal of Business Research*, 66(10), 2147-2152.
- Loscalzo, Y., & Giannini, M. (2019). Study engagement in Italian university students: a confirmatory factor analysis of the Utrecht Work Engagement Scale—Student version. *Social Indicators Research*, 142(2), 845-854.
- Lüftenegger, M., & Chen, J. A. (2017). Conceptual issues and assessment of implicit theories. *Zeitschrift für Psychologie*.
- Luo, L., & Wildemuth, B. M. (2009). Semistructured interviews. *Applications of social research methods to questions in information and library science*, 232.
- Luthans, F., & Youssef, C. M. (2007). Emerging positive organizational behavior. *Journal of management*, 33(3), 321-349.
- Lv, A., Shen, X., Cao, Y., Su, Y., & Chen, X. (2012). Conscientiousness and organizational citizenship behavior: The mediating role of organizational justice. *Social Behavior and Personality: an international journal*, 40(8), 1293-1301.



- Macakova, V., & Wood, C. (2020). The relationship between academic achievement, self-efficacy, implicit theories and basic psychological needs satisfaction among university students. *Studies in Higher Education*, 1-11.
- MacCann, C. (2010). Further examination of emotional intelligence as a standard intelligence: A latent variable analysis of fluid intelligence, crystallized intelligence, and emotional intelligence. *Personality and Individual Differences*, 49(5), 490-496. consensus of models and measures. *Social and Personality Psychology Compass*, 4(10), 821-840.
- MacCann, C., & Roberts, R. D. (2008). New paradigms for assessing emotional intelligence: theory and data. *Emotion*, 8(4), 540.
- Macey, W. H., & Schneider, B. (2008). The meaning of employee engagement. *Industrial and Organizational Psychology*, 1(1), 3-30.
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate behavioral research*, 39(1), 99-128.
- Madjar, N., Kaplan, A., & Weinstock, M. (2011). Clarifying mastery-avoidance goals in high school: Distinguishing between intrapersonal and task-based standards of competence. *Contemporary Educational Psychology*, 36(4), 268-279.
- Mahembe, B., & Engelbrecht, A. S. (2014). The relationship between servant leadership, organisational citizenship behaviour and team effectiveness. *SA Journal of Industrial Psychology*, 40(1), 1-10.
- Mahon, E. G., Taylor, S. N., & Boyatzis, R. E. (2014). Antecedents of organizational engagement: exploring vision, mood and perceived organizational support with emotional intelligence as a moderator. *Frontiers in psychology*, 5, 1322.
- Malinowski, P., & Lim, H. J. (2015). Mindfulness at work: Positive affect, hope, and optimism mediate the relationship between dispositional mindfulness, work engagement, and well-being. *Mindfulness*, 6(6), 1250-1262.

- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological review*, 98(2), 224.
- Marsh, H. W., & Hau, K. T. (1999). Confirmatory factor analysis: Strategies for small sample sizes. *Statistical strategies for small sample research*, 1, 251-284.
- Martins, A., Ramalho, N., & Morin, E. (2010). A comprehensive meta-analysis of the relationship between emotional intelligence and health. *Personality and individual differences*, 49(6), 554-564.
- Maslach, C. & Leiter, M.P. (1997). The truth about burnout: How organizations cause personal stress and what to do about it. San Francisco, CA: Jossey-Bass.
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: recent research and its implications for psychiatry. *World psychiatry*, 15(2), 103-111.
- Mathur, G., & Sareen, P. (2013). Role of emotional intelligence in managing occupational stress. *Review of HRM*, 2, 121.
- Matthews, G., Emo, A. K., Roberts, R. D., & Zeidner, M. (2006). *What is this thing called emotional intelligence?* Lawrence Erlbaum Associates Publishers.
- Matthews, G., Zeidner, M., & Roberts, R. D. (2007). Emotional intelligence: Consensus, controversies, and questions. In G. Matthews, M. Zeidner, & R. D. Roberts (Eds.), *Emotional intelligence: Knowns and unknowns*. Cambridge, MA: Oxford University Press.
- Matthews, G., Zeidner, M., & Roberts, R. D. (2007). Measuring emotional intelligence: Promises, pitfalls, solutions. *Handbook of methods in positive psychology*, 189-204.
- Matthews, G., Zeidner, M., & Roberts, R. D. (2012). Emotional intelligence: A promise unfulfilled? *Japanese Psychological Research*, 54(2), 105-127.
- Matthews, R. A., Mills, M. J., & Wise, S. (2020). Advancing Research and Practice Through an Empirically Validated Short-Form Measure of Work Engagement. *Occupational Health Science*, 4(3), 305-331.

- Maul, A. (2012). Higher standards of validity evidence are needed in the measurement of emotional intelligence. *Emotion Review*, 4(4), 411-412.
- Maul, A. (2012). The validity of the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT) as a measure of emotional intelligence. *Emotion Review*, 4(4), 394-402.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence*, 27(4), 267-298.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (2000). Selecting a measure of emotional intelligence: The case for ability scales. In R. Bar-On & J. D. A. Parker (Eds.), *The handbook of emotional intelligence: Theory, development, assessment, and application at home, school, and in the workplace* (pp. 320–342). Jossey-Bass.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (2016). The ability model of emotional intelligence: Principles and updates. *Emotion review*, 8(4), 290-300.
- Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annu. Rev. Psychol.*, 59, 507-536.
- Mayer, J. D., Salovey, P., & Caruso, D. R. (2004). Target Articles. Emotional Intelligence: Theory, Findings, and Implications". *Psychological inquiry*, 15(3), 197-215.
- Mayer, J. D., Salovey, P., & Caruso, D. R. (2008). Emotional intelligence: New ability or eclectic traits? *American psychologist*, 63(6), 503.
- Mayer, J. D., Salovey, P., & Caruso, D. R. (2012). The validity of the MSCEIT: Additional analyses and evidence. *Emotion review*, 4(4), 403-408.
- Mayers, A. (2013). Introduction to statistics and SPSS in psychology. Harlow: Pearson Education.
- McRae, Kateri, Bethany Ciesielski, and James J. Gross. "Unpacking cognitive reappraisal: goals, tactics, and outcomes." *Emotion* 12.2 (2012): 250.
- Mérida-López, S., & Extremera, N. (2017). Emotional intelligence and teacher burnout: A systematic review. *International Journal of Educational Research*, 85, 121-130.

- Mérida-López, S., Bakker, A. B., & Extremera, N. (2019). How does emotional intelligence help teachers to stay engaged? Cross-validation of a moderated mediation model. *Personality and Individual Differences, 151*, 109393.
- Mérida-López, S., Extremera, N., & Rey, L. (2017). Contributions of work-related stress and emotional intelligence to teacher engagement: Additive and interactive effects. *International journal of environmental research and public health, 14*(10), 1156.
- Mérida-López, S., Extremera, N., & Sánchez-Álvarez, N. (2020). The Interactive Effects of Personal Resources on Teachers' Work Engagement and Withdrawal Intentions: A Structural Equation Modeling Approach. *International journal of environmental research and public health, 17*(7), 2170.
- Meyers, M. C., van Woerkom, M., & Bakker, A. B. (2013). The added value of the positive: A literature review of positive psychology interventions in organizations. *European Journal of Work and Organizational Psychology, 22*(5), 618-632.
- Miao, C., Humphrey, R. H., & Qian, S. (2017). A meta-analysis of emotional intelligence and work attitudes. *Journal of Occupational and Organizational Psychology, 90*(2), 177-202.
- Mikolajczak, M., Luminet, O., Leroy, C., & Roy, E. (2007). Psychometric properties of the Trait Emotional Intelligence Questionnaire: Factor structure, reliability, construct, and incremental validity in a French-speaking population. *Journal of personality assessment, 88*(3), 338-353.
- Mills, M. J., Culbertson, S. S., & Fullagar, C. J. (2012). Conceptualizing and measuring engagement: An analysis of the Utrecht Work Engagement Scale. *Journal of Happiness Studies, 13*(3), 519-545.
- Minghui, L., Lei, H., Xiaomeng, C., & Potmėšilc, M. (2018). Teacher efficacy, work engagement, and social support among Chinese special education school teachers. *Frontiers in Psychology, 9*, 648.
- Mohamed, R., & Alias, A. A. S. (2012). Evaluating the effectiveness of a training program using the four level Kirkpatrick model in the banking sector in malaysia.

- Mohammad, J., Quoquab Habib, F., & Alias, M. A. (2011). Job Satisfaction and Organisational Citizenship Behaviour: An Empirical Study at Higher Learning Institutions. *Asian Academy of Management Journal, 16*(2).
- Mojavezi, A., & Tamiz, M. P. (2012). The Impact of Teacher Self-efficacy on the Students' Motivation and Achievement. *Theory & Practice in Language Studies, 2*(3).
- Molden, D. C., & Dweck, C. S. (2006). Finding "meaning" in psychology: a lay theories approach to self-regulation, social perception, and social development. *American Psychologist, 61*(3), 192.
- Molero Jurado, M. D. M., Pérez-Fuentes, M. D. C., Oropesa Ruiz, N. F., Simón Márquez, M. D. M., & Gázquez Linares, J. J. (2019). Self-efficacy and emotional intelligence as predictors of perceived stress in nursing professionals. *Medicina, 55*(6), 237.
- Mongrain, M., & Anselmo-Matthews, T. (2012). Do positive psychology exercises work? A replication of Seligman et al.(.). *Journal of clinical psychology, 68*(4).
- Montano, D., Hoven, H., & Siegrist, J. (2014). Effects of organisational-level interventions at work on employees' health: a systematic review. *BMC public health, 14*(1), 1-9.
- Moore, G.F., Audrey, S., Barker, M., Bond, L., Bonell, C., Hardeman, W., Moore, L., O'Cathain, A., Tinati, T., Wright, D., & Baird, J. (2015). Process evaluation of complex interventions: Medical Research Council guidance. *bmj, 350*.
- Moreira-Fontán, E., García-Señorán, M., Conde-Rodríguez, Á., & González, A. (2019). Teachers' ICT-related self-efficacy, job resources, and positive emotions: Their structural relations with autonomous motivation and work engagement. *Computers & Education, 134*, 63-77.
- Mortiboys, A. (2013). *Teaching with emotional intelligence: A step-by-step guide for higher and further education professionals*. Routledge.
- Motowildo, S. J., Borman, W. C., & Schmit, M. J. (1997). A theory of individual differences in task and contextual performance. *Human performance, 10*(2), 71-83.

- Moumne, S., Hall, N., Böke, B. N., Bastien, L., & Heath, N. (2021). Implicit Theories of Emotion, Goals for Emotion Regulation, and Cognitive Responses to Negative Life Events. *Psychological Reports, 124*(4), 1588-1620.
- Mouton, A., Hansenne, M., Delcour, R., & Cloes, M. (2013). Emotional intelligence and self-efficacy among physical education teachers. *Journal of Teaching in Physical Education, 32*(4), 342-354.
- Mouton, N., Louw, G. P., & Strydom, G. (2013). Critical challenges of the South African school system. *International Business & Economics Research Journal (IBER), 12*(1), 31-44.
- Mukaihata, T., Fujimoto, H., & Greiner, C. (2020). Factors influencing work engagement among psychiatric nurses in Japan. *Journal of nursing management, 28*(2), 306-316.
- Murayama, K., Elliot, A. J., & Friedman, R. (2012). Achievement goals.
- Murphy, K. R. (Ed.). (2014). *A critique of emotional intelligence: what are the problems and how can they be fixed?*. Psychology Press.
- Murta, S. G., Sanderson, K., & Oldenburg, B. (2007). Process evaluation in occupational stress management programs: a systematic review. *American Journal of Health Promotion, 21*(4), 248-254.
- Myint, A. A., & Aung, A. A. (2016). The relationship between emotional intelligence and job performance of Myanmar school teachers. *AsTEN Journal of Teacher Education, 1*(1).
- Najafi, S., Noruzy, A., Azar, H. K., Nazari-Shirkouhi, S., & Dalv, M. R. (2011). Investigating the relationship between organizational justice, psychological empowerment, job satisfaction, organizational commitment and organizational citizenship behavior: An empirical model. *African Journal of Business Management, 5*(13), 5241-5248.
- Naseem, K. (2018). Job stress, happiness and life satisfaction: The moderating role of emotional intelligence empirical study in telecommunication sector Pakistan. *Journal of Social Sciences and Humanity Studies, 4*(1), 7-14.

- Naugle, K. A., Naugle, L. B., & Naugle, R. J. (2000). Kirkpatrick's evaluation model as a means of evaluating teacher performance. *EDUCATION-INDIANAPOLIS THEN CHULA VISTA-*, *121*(1), 135-144.
- Nelis, D., Quoidbach, J., Mikolajczak, M., & Hansenne, M. (2009). Increasing emotional intelligence:(How) is it possible?. *Personality and individual differences*, *47*(1), 36-41.
- Neuman, W. L. (2013). *Social Research Methods: Pearson New International Edition: Qualitative and Quantitative Approaches: Pearson Higher Ed.*
- Neuman, W. L., & Robson, K. (2014). *Basics of social research*. Toronto: Pearson Canada.
- Newman, A., Schwarz, G., Cooper, B., & Sendjaya, S. (2017). How servant leadership influences organizational citizenship behavior: The roles of LMX, empowerment, and proactive personality. *Journal of Business Ethics*, *145*(1), 49-62.
- Ng, C. H. (2010). Do career goals promote continuous learning among practicing teachers? *Teachers and Teaching: theory and practice*, *16*(4), 397-422.
- Ngui, G. K., & Lay, Y. F. (2018). Investigating the effect of stress-coping abilities on stress in practicum training. *The Asia-Pacific Education Researcher*, *27*(4), 335-343.
- Nichols, S. L., Schutz, P. A., Rodgers, K., & Bilica, K. (2017). Early career teachers' emotion and emerging teacher identities. *Teachers and Teaching*, *23*(4), 406-421.
- Nielsen, K., & Abildgaard, J. S. (2013). Organizational interventions: A research-based framework for the evaluation of both process and effects. *Work & Stress*, *27*(3), 278-297.
- Nielsen, K., & Randall, R. (2013). Opening the black box: presenting a model for evaluating organizational-level interventions. *European Journal of Work and Organizational Psychology*, *22*(5), 601-617.
- Nielsen, K., Randall, R., & Christensen, K. B. (2010). Developing new ways of evaluating organizational-level interventions. *Contemporary occupational health psychology: Global perspectives on research and practice*, *1*, 21-45.

- Nizielski, S., Hallum, S., Lopes, P. N., & Schütz, A. (2012). Attention to student needs mediates the relationship between teacher emotional intelligence and student misconduct in the classroom. *Journal of Psychoeducational Assessment, 30*(4), 320-329.
- Notelaers, G., & Van der Heijden, B. I. (2021). Construct validity in workplace bullying and harassment research. *Concepts, Approaches and Methods, 369-424*.
- Nytrø, K., Saksvik, P. Ø., Mikkelsen, A., Bohle, P., & Quinlan, M. (2000). An appraisal of key factors in the implementation of occupational stress interventions. *Work & Stress, 14*(3), 213-225.
- O'Reilly-Shah, V. N. (2017). Factors influencing healthcare provider respondent fatigue answering a globally administered in-app survey. *PeerJ, 5*, e3785.
- Oakley, A., Strange, V., Bonell, C., Allen, E., & Stephenson, J. (2006). Process evaluation in randomised controlled trials of complex interventions. *Bmj, 332*(7538), 413-416.
- O'Connor, P. J., Hill, A., Kaya, M., & Martin, B. (2019). The measurement of emotional intelligence: A critical review of the literature and recommendations for researchers and practitioners. *Frontiers in psychology, 10*, 1116.
- Onwuegbuzie, A. J., & Johnson, R. B. (2006). The validity issue in mixed research. *Research in the Schools, 13*(1), 48-63.
- Oplatka, I., & Stundi, M. (2011). The components and determinants of preschool teacher organisational citizenship behaviour. *International Journal of Educational Management*.
- Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington Books/DC Heath and Com.
- Organ, D. W. (1997). Organizational citizenship behavior: It's construct clean-up time. *Human performance, 10*(2), 85-97.
- Özduran, A., & Tanova, C. (2017). Manager mindsets and employee organizational citizenship behaviours. *International Journal of Contemporary Hospitality Management*.



- Öznacar, B., Yilmaz, E., & Güven, Z. (2017). The relationship between teaching styles and emotional intelligence of teachers. *Journal of Economic & Management Perspectives*, *11*(1), 570-576.
- Pacheco, N., Peña, L., & Sánchez Álvarez, N. (2019). Validation of the Spanish version of the Wong Law emotional intelligence scale (WLEIS-S). *Psicothema*.
- Pallant, J. (2007). SPSS survival manual, 3rd. Edition. *McGrath Hill*, *15*, 361-371.
- Palmer, B. R., Manocha, R., Gignac, G., & Stough, C. (2003). Examining the factor structure of the Bar-On Emotional Quotient Inventory with an Australian general population sample. *Personality and individual differences*, *35*(5), 1191-1210.
- Panhwar, A. H., Ansari, S., & Shah, A. A. (2017). Post-positivism: An effective paradigm for social and educational research. *International Research Journal of Arts & Humanities (IRJAH)*, *45*(45).
- Paunesku, D., Walton, G. M., Romero, C., Smith, E. N., Yeager, D. S., & Dweck, C. S. (2015). Mind-set interventions are a scalable treatment for academic underachievement. *Psychological science*, *26*(6), 784-793.
- Paunonen, S. V., & O'Neill, T. A. (2010). Self-reports, peer ratings and construct validity. *European Journal of Personality: Published for the European Association of Personality Psychology*, *24*(3), 189-206.
- Payne, W. L. (1986). A study of emotion, developing emotional intelligence: self-integration; relating to fear, pain, and desire. *Dissertation Abstracts International*, *47*, 203A.
- Pekrun, R., & Linnenbrink-Garcia, L. (2012). Academic emotions and student engagement. In *Handbook of research on student engagement* (pp. 259-282). Springer, Boston, MA.
- Penfold, R. B., & Zhang, F. (2013). Use of interrupted time series analysis in evaluating health care quality improvements. *Academic pediatrics*, *13*(6), S38-S44.
- Pereira, N. S., & Marques-Pinto, A. (2017). The Role of Participant Responsiveness on a Socio-Emotional Learning Program. *The Spanish journal of psychology*, *20*.

- Perreault, D., Mask, L., Morgan, M., & Blanchard, C. M. (2014). Internalizing emotions: Self-determination as an antecedent of emotional intelligence. *Personality and Individual Differences, 64*, 1-6.
- Petrides, K. V. (2009). Psychometric properties of the trait emotional intelligence questionnaire (TEIQue). In *Assessing emotional intelligence* (pp. 85-101). Springer, Boston, MA.
- Petrides, K. V. (2010). Trait emotional intelligence theory. *Industrial and organizational psychology, 3*(2), 136-139.
- Petrides, K. V. (2011). Ability and trait emotional intelligence. In T. Chamorro-Premuzic, S. von Stumm, & A. Furnham (Eds.), *The Wiley-Blackwell handbook of individual differences* (pp. 656–678). Wiley Blackwell.
- Petrides, K. V., & Furnham, A. (2000). On the dimensional structure of emotional intelligence. *Personality and individual differences, 29*(2), 313-320.
- Petrides, K. V., Furnham, A., & Mavroveli, S. (2007). Trait emotional intelligence: Moving forward in the field of EI. *Emotional intelligence: Knowns and unknowns, 4*, 151-166.
- Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British journal of psychology, 98*(2), 273-289.
- Piwowar, V., Thiel, F., & Ophardt, D. (2013). Training inservice teachers' competencies in classroom management. A quasi-experimental study with teachers of secondary schools. *Teaching and Teacher Education, 30*, 1-12.
- Pluye, P., & Hong, Q. N. (2014). Combining the power of stories and the power of numbers: mixed methods research and mixed studies reviews. *Annual review of public health, 35*, 29-45.
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The leadership quarterly, 1*(2), 107-142.

- Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of management*, 26(3), 513-563.
- Pool, L. D., & Qualter, P. (2012). Improving emotional intelligence and emotional self-efficacy through a teaching intervention for university students. *Learning and Individual Differences*, 22(3), 306-312.
- Pool, L. D., & Qualter, P. (Eds.). (2018). *An introduction to emotional intelligence*. John Wiley & Sons.
- Poortvliet, P. M., Anseel, F., & Theuwis, F. (2015). Mastery-approach and mastery-avoidance goals and their relation with exhaustion and engagement at work: The roles of emotional and instrumental support. *Work & Stress*, 29(2), 150-170.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, 40(3), 879-891.
- Price, P. C., Jhangiani, R. S., & Chiang, I. C. A. (2015). Quasi-experimental research. *Research Methods in Psychology*.
- Proyer, R. T., Gander, F., Wellenzohn, S., & Ruch, W. (2014). Positive psychology interventions in people aged 50–79 years: long-term effects of placebo-controlled online interventions on well-being and depression. *Aging & mental health*, 18(8), 997-1005.
- Racher, F. E., & Robinson, S. (2003). Are phenomenology and postpositivism strange bedfellows?. *Western journal of nursing research*, 25(5), 464-481.
- Radic, A., Arjona-Fuentes, J. M., Ariza-Montes, A., Han, H., & Law, R. (2020). Job demands–job resources (JD-R) model, work engagement, and well-being of cruise ship employees. *International Journal of Hospitality Management*, 88, 102518.
- Rai, N., & Thapa, B. (2015). A study on purposive sampling method in research. *Kathmandu: Kathmandu School of Law*.

- Ramana, T. V. (2013). Emotional intelligence and teacher effectiveness: An analysis. *Voice of research, 2*(2), 18-22.
- Ramana, T. V. (2013). Emotional intelligence and teacher effectiveness: An analysis. *Voice of research, 2*(2), 18-22.
- Randall, R., & Nielsen, K. (2010). Well-Being at Work. *Occupational health psychology, 88*.
- Randall, R., Nielsen, K., & Houdmont, J. (2019). Process evaluation for stressor reduction interventions in sport. *Journal of Applied Sport Psychology, 31*(1), 47-64.
- Ransford, C. R., Greenberg, M. T., Domitrovich, C. E., Small, M., & Jacobson, L. (2009). The Role of Teachers' Psychological Experiences and Perceptions of Curriculum Supports on the Implementation of a Social and Emotional Learning Curriculum. *School Psychology Review, 38*(4).
- Rastogi, R., & Garg, P. (2011). Organizational citizenship behavior: Towards psychological well-being of employees. *International Journal of Arts & Sciences, 4*(22), 13.
- Rathore, D., Chadha, N. K., & Rana, S. (2017). Emotional intelligence in the workplace. *Indian Journal of Positive Psychology, 8*(2), 162–165.
- Rattan, A., Good, C., & Dweck, C. S. (2012). “It's ok—Not everyone can be good at math”: Instructors with an entity theory comfort (and demotivate) students. *Journal of Experimental Social Psychology, 48*(3), 731-737.
- Révész, J. R., & Rogers, J. (2019). Experimental and quasi-experimental design. *Research Gate Publication, 135*.
- Rey, L., Extremera, N., & Pena, M. (2016). Emotional competence relating to perceived stress and burnout in Spanish teachers: a mediator model. *PeerJ, 4*, e2087.
- Ribeiro, J. D., Bender, T. W., Selby, E. A., Hames, J. L., & Joiner, T. E. (2011). Development and validation of a brief self-report measure of agitation: The Brief Agitation Measure. *Journal of Personality Assessment, 93*(6), 597-604.

- Rissanen, I., Kuusisto, E., Tuominen, M., & Tirri, K. (2019). In search of a growth mindset pedagogy: A case study of one teacher's classroom practices in a Finnish elementary school. *Teaching and teacher education, 77*, 204-213.
- Roberts, R. D., MacCann, C., Matthews, G., & Zeidner, M. (2010). Emotional intelligence: Toward a consensus of models and measures. *Social and Personality Psychology Compass, 4*(10), 821-840.
- Roberts, R. D., Schulze, R., O'Brien, K., MacCann, C., Reid, J., & Maul, A. (2006). Exploring the validity of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) with established emotions measures. *Emotion, 6*(4), 663.
- Roemer, L., Williston, S. K., & Rollins, L. G. (2015). Mindfulness and emotion regulation. *Current Opinion in Psychology, 3*, 52-57.
- Romasz, T. E., Kantor, J. H., & Elias, M. J. (2004). Implementation and evaluation of urban school-wide social-emotional learning programs. *Evaluation and Program Planning, 27*(1), 89-103.
- Romero, C., Master, A., Paunesku, D., Dweck, C. S., & Gross, J. J. (2014). Academic and emotional functioning in middle school: the role of implicit theories. *Emotion, 14*(2), 227.
- Roorda, D. L., Koomen, H. M., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher-student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of educational research, 81*(4), 493-529.
- Ruiz-Aranda, D., Castillo, R., Salguero, J. M., Cabello, R., Fernández-Berrocal, P., & Balluerka, N. (2012). Short-and midterm effects of emotional intelligence training on adolescent mental health. *Journal of adolescent health, 51*(5), 462-467.
- Ruohotie-Lyhty, M., Korppi, A., Moate, J., & Nyman, T. (2018). Seeking understanding of foreign language teachers' shifting emotions in relation to pupils. *Scandinavian Journal of Educational Research, 62*(2), 272-286.
- Ryan, G. S. (2019). Postpositivist, critical realism: philosophy, methodology and method for nursing research. *Nurse researcher, 27*(3), 20-26.

- Salami, S. O. (2010). Occupational Stress and Well-Being: Emotional Intelligence, Self-Efficacy, Coping, Negative and Social Support as Moderators. *Journal of International Social Research*, 3(12).
- Salanova, M., Schaufeli, W. B., Xanthopoulou, D., & Bakker, A. B. (2010). The gain spiral of resources and work engagement: Sustaining a positive worklife. *Work engagement: A handbook of essential theory and research*, 118-131.
- Salazar, M. S. (2015). The dilemma of combining positive and negative items in scales. *Psicothema*, 27(2), 192-199.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, cognition and personality*, 9(3), 185-211.
- Samuels, P. (2015). Advice on reliability analysis with small samples. *Birmingham City*.
- Sánchez-Álvarez, N., Extremera, N., & Fernández-Berrocal, P. (2016). The relation between emotional intelligence and subjective well-being: A meta-analytic investigation. *The Journal of Positive Psychology*, 11(3), 276-285.
- Sánchez-Álvarez, N., Extremera, N., & Fernández-Berrocal, P. (2015). Maintaining life satisfaction in adolescence: Affective mediators of the influence of perceived emotional intelligence on overall life satisfaction judgments in a two-year longitudinal study. *Frontiers in Psychology*, 6, 1892.
- Santos, A., Mustafa, M. J., & Gwi, T. C. (2015). Trait emotional intelligence, emotional labour, and burnout among Malaysian HR professionals. *Management Research Review*.
- Santos, A., Mustafa, M., & Cantu, A. A. (2018). Exploring the direct and indirect effects of emotional intelligence and frequency of customer contact on organisational citizenship behaviours among hotel employees in Mexico. *International Journal of Work Organisation and Emotion*, 9(3), 243-263.

- Saunders, R. P., Evans, M. H., & Joshi, P. (2005). Developing a process-evaluation plan for assessing health promotion program implementation: a how-to guide. *Health promotion practice, 6*(2), 134-147.
- Schaufeli, W. (2012). Work engagement: What do we know and where do we go?. *Romanian Journal of Applied Psychology, 14*(1), 3-10.
- Schaufeli, W. (2012). Work engagement: What do we know and where do we go?. *Romanian Journal of Applied Psychology, 14*(1), 3-10.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 25*(3), 293-315.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66*(4), 701-716. doi:10.1177/0013164405282471.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness studies, 3*(1), 71-92.
- Schaufeli, W. B., Shimazu, A., Hakanen, J., Salanova, M., & De Witte, H. (2017). An ultra-short measure for work engagement. *European Journal of Psychological Assessment.*
- Schaufeli, W., & Salanova, M. (2007). Work engagement. *Managing social and ethical issues in organizations, 135*, 177.
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of psychological research online, 8*(2), 23-74.

- Schipper, T. M., de Vries, S., Goei, S. L., & van Veen, K. (2020). Promoting a professional school culture through lesson study? An examination of school culture, school conditions, and teacher self-efficacy. *Professional Development in Education*, 46(1), 112-129.
- Schleider, J. L., & Schroder, H. S. (2018). Implicit theories of personality across development: impacts on coping, resilience, and mental health. In V. Ziegler-Hill & T. K. Shackelford (Eds.), *The SAGE Handbook of Personality and Individual Differences*. Sage Publications.
- Schleider, J. L., Abel, M. R., & Weisz, J. R. (2019). Do immediate gains predict long-term symptom change? Findings from a randomized trial of a single-session intervention for youth anxiety and depression. *Child Psychiatry & Human Development*, 50(5), 868-881.
- Schleider, J., & Weisz, J. (2018). A single-session growth mindset intervention for adolescent anxiety and depression: 9-month outcomes of a randomized trial. *Journal of Child Psychology and Psychiatry*, 59(2), 160-170.
- Schmid, R. F., & Thomas, J. (2020). Teachers' ambulatory heart rate variability as an outcome and moderating variable in the job demands-resources model. *Anxiety, Stress, & Coping*, 33(4), 387-402.
- Schneider, T. R., Lyons, J. B., & Khazon, S. (2013). Emotional intelligence and resilience. *Personality and Individual Differences*, 55(8), 909-914.
- Schoenfelder, E. N., Sandler, I. N., Millsap, R. E., Wolchik, S. A., Berkel, C., & Ayers, T. S. (2013). Caregiver responsiveness to the family bereavement program: what predicts responsiveness? What does responsiveness predict?. *Prevention Science*, 14(6), 545-556.
- Schroder, H. S., Dawood, S., Yalch, M. M., Donnellan, M. B., & Moser, J. S. (2015). The role of implicit theories in mental health symptoms, emotion regulation, and hypothetical treatment choices in college students. *Cognitive therapy and research*, 39(2), 120-139.
- Schultes, M. T., Stefanek, E., van de Schoot, R., Strohmeier, D., & Spiel, C. (2015). Measuring implementation of a school-based violence prevention program. *Zeitschrift für Psychologie*.



- Schutte, N. S., & Malouff, J. M. (2011). Emotional intelligence mediates the relationship between mindfulness and subjective well-being. *Personality and individual differences, 50*(7), 1116-1119.
- Schutte, N. S., Malouff, J. M., & Thorsteinsson, E. B. (2013). Increasing emotional intelligence through training: Current status and future directions.
- Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and individual differences, 25*(2), 167-177.
- Schutte, N. S., Malouff, J. M., Thorsteinsson, E. B., Bhullar, N., & Rooke, S. E. (2007). A meta-analytic investigation of the relationship between emotional intelligence and health. *Personality and individual differences, 42*(6), 921-933.
- Schutte, N., & Malouff, J. (2002). Incorporating emotional skills content in a college transition course enhances student retention. *Journal of the First-Year Experience & Students in Transition, 14*(1), 7-21.
- Schutz, P. A. (2014). Inquiry on teachers' emotion. *Educational Psychologist, 49*(1), 1-12.
- Schutz, P. A., & Lee, M. (2014). Teacher emotion, emotional labor and teacher identity. In *English as a foreign language teacher education* (pp. 167-186). Brill.
- Scott-Halsell, S. A., Saiprasert, W., & Yang, J. (2013). Emotional intelligence differences: Could culture be the culprit?. *Journal of Teaching in Travel & Tourism, 13*(4), 339-353.
- Seaton, F. S. (2018). Empowering teachers to implement a growth mindset. *Educational Psychology in Practice, 34*(1), 41-57.
- Selamat, N., Nordin, N., & Fook, C. Y. (2016). Examining the Relationship between Organisational Justice and Organisational Citizenship Behaviour: An Application in Malaysian Secondary Schools. In *International Conference on Leadership and Management* (pp. 1-5).

- Seligman, M. E., Ernst, R. M., Gillham, J., Reivich, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford review of education*, 35(3), 293-311.
- Seligman, M. E., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: empirical validation of interventions. *American psychologist*, 60(5), 410.
- Seligman, Martin. "Flourish: Positive psychology and positive interventions." *The Tanner lectures on human values* 31.4 (2010): 1-56.
- Sesen, H., & Basim, N. H. (2012). Impact of satisfaction and commitment on teachers' organizational citizenship. *Educational Psychology*, 32(4), 475-491.
- Sheard, M. K., Ross, S., & Cheung, A. (2012). Educational effectiveness of an intervention programme for social-emotional learning. *International Journal of Multiple Research Approaches*, 6(3), 264-284.
- Sheldon, K. M., & King, L. (2001). Why positive psychology is necessary. *American psychologist*, 56(3), 216.
- Shen, B., McCaughy, N., Martin, J., Garn, A., Kulik, N., & Fahlman, M. (2015). The relationship between teacher burnout and student motivation. *British Journal of Educational Psychology*, 85(4), 519-532.
- Shi, J., & Wang, L. (2007). Validation of emotional intelligence scale in Chinese university students. *Personality and individual differences*, 43(2), 377-387.
- Shih, S. S. (2011). Perfectionism, implicit theories of intelligence, and Taiwanese eighth-grade students' academic engagement. *The Journal of Educational Research*, 104(2), 131-142.
- Shively, R. L., & Ryan, C. S. (2013). Longitudinal changes in college math students' implicit theories of intelligence. *Social Psychology of Education*, 16(2), 241-256.
- Siegling, A. B., Saklofske, D. H., & Petrides, K. V. (2015). Measures of ability and trait emotional intelligence. *Measures of personality and social psychological constructs*, 381-414.

- Siegling, A. B., Vesely, A. K., Petrides, K. V., & Saklofske, D. H. (2015). Incremental validity of the trait emotional intelligence questionnaire–short form (TEIQue–SF). *Journal of personality assessment, 97*(5), 525-535.
- Simbula, S., & Guglielmi, D. (2013). I am engaged, I feel good, and I go the extra-mile: Reciprocal relationships between work engagement and consequences. *Revista de Psicología del Trabajo y de las Organizaciones, 29*(3), 117-125.
- Sin, N. L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of clinical psychology, 65*(5), 467-487.
- Singh, A. K., & Singh, A. P. (2009). Does personality predict organisational citizenship behaviour among managerial personnel. *Journal of the Indian Academy of Applied Psychology, 35*(2), 291-298.
- Skaalvik, E. M., & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and teacher education, 26*(4), 1059-1069.
- Skaalvik, E. M., & Skaalvik, S. (2015). Job Satisfaction, Stress and Coping Strategies in the Teaching Profession-What Do Teachers Say? *International education studies, 8*(3), 181-192.
- Skaalvik, E. M., & Skaalvik, S. (2018). Job demands and job resources as predictors of teacher motivation and well-being. *Social Psychology of Education, 21*(5), 1251-1275.
- Skaalvik, E. M., & Skaalvik, S. (2019). Teacher self-efficacy and collective teacher efficacy: relations with perceived job resources and job demands, feeling of belonging, and teacher engagement. *Creative Education, 10*(07), 1400.
- Slaski, M., & Cartwright, S. (2003). Emotional intelligence training and its implications for stress, health and performance. *Stress and health, 19*(4), 233-239.
- Smith, C. A. O. D. W. N. J. P., Organ, D. W., & Near, J. P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of applied psychology, 68*(4), 653.

- Somech, A. (2016). The cost of going the extra mile: the relationship between teachers' organizational citizenship behavior, role stressors, and strain with the buffering effect of job autonomy. *Teachers and Teaching*, 22(4), 426-447.
- Sonnentag, S., & Grant, A. M. (2012). Doing good at work feels good at home, but not right away: When and why perceived prosocial impact predicts positive affect. *Personnel Psychology*, 65(3), 495-530.
- Spinath, B., & Stiensmeier-Pelster, J. (2001). Implicit theories about the malleability of intelligence and ability. *Psychological Test and Assessment Modeling*, 43(1), 53.
- Srivastava, S. K., & Gope, A. K. (2015). The antecedents and consequences of Organization Citizenship Behaviour (OCB): A conceptual inquiry. *Management Insight*, 11(2), 51-56.
- Steinhardt, M. A., Smith Jaggars, S. E., Faulk, K. E., & Gloria, C. T. (2011). Chronic work stress and depressive symptoms: Assessing the mediating role of teacher burnout. *Stress and health*, 27(5), 420-429.
- Stoeber, J., Stoll, O., Pescheck, E., & Otto, K. (2008). Perfectionism and achievement goals in athletes: Relations with approach and avoidance orientations in mastery and performance goals. *Psychology of sport and exercise*, 9(2), 102-121.
- Sturgiss, E. A., & Clark, A. M. (2020). Using critical realism in primary care research: an overview of methods. *Fam Pract*, 37, 143-5.
- Sulaiman, W. S. W., & Noor, M. Z. M. (2015). Examining the psychometric properties of the Wong and Law Emotional Intelligences Scale (WLEIS). *e-Bangi*, 12(3).
- Sutherland, L., Howard, S., & Markauskaite, L. (2010). Professional identity creation: Examining the development of beginning preservice teachers' understanding of their work as teachers. *Teaching and teacher education*, 26(3), 455-465.
- Sutton, R. E. (2005). Teachers' emotions and classroom effectiveness: Implications from recent research. *The Clearing House*, 229-2.

- Sutton, R. E., & Wheatley, K. F. (2003). Teachers' emotions and teaching: A review of the literature and directions for future research. *Educational psychology review*, 15(4), 327-358.
- Szczygieł, D., & Mikolajczak, M. (2017). Why are people high in emotional intelligence happier? They make the most of their positive emotions. *Personality and Individual Differences*, 117, 177-181.
- Tabachnick, B. G., & Fidell, L. S. (2014). Using multivariate statistics . Harlow. *Essex: Pearson Education Limited*.
- Tabachnick, B. G., Fidell, L. S. (2007). *Using multivariate statistics* (Vol. 5, pp. 481-498). Boston, MA: pearson.
- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). *Using multivariate statistics* (Vol. 5, pp. 481-498). Boston, MA: pearson.
- Taherdoost, H., Sahibuddin, S., & Jalaliyoon, N. (2014). Exploratory factor analysis; concepts and theory.
- Tamir, M., John, O. P., Srivastava, S., & Gross, J. J. (2007). Implicit theories of emotion: affective and social outcomes across a major life transition. *Journal of personality and social psychology*, 92(4), 731.
- Tan, K., & Newman, E. (2013). The evaluation of sales force training in retail organizations: a test of Kirkpatrick's four-level model. *International Journal of Management*, 30(2), 692.
- Tao, V. Y., Li, Y., Lam, K. H., Leung, C. W., Sun, C. I., & Wu, A. M. (2021). From teachers' implicit theories of intelligence to job stress: The mediating role of teachers' causal attribution of students' academic achievement. *Journal of Applied Social Psychology*, 51(5), 522-533.
- Tarbetsky, A. L., Collie, R. J., & Martin, A. J. (2016). The role of implicit theories of intelligence and ability in predicting achievement for Indigenous (Aboriginal) Australian students. *Contemporary Educational Psychology*, 47, 61-71.

- Teng, F. (2017). Emotional development and construction of teacher identity: Narrative interactions about the pre-service teachers' practicum experiences. *Australian Journal of Teacher Education (Online)*, 42(11), 117-134.
- Tesi, A., Aiello, A., & Giannetti, E. (2019). The work-related well-being of social workers: Framing job demands, psychological well-being, and work engagement. *Journal of Social Work*, 19(1), 121-141.
- Tett, R. P., Freund, K. A., Christiansen, N. D., Fox, K. E., & Coaster, J. (2012). Faking on self-report emotional intelligence and personality tests: Effects of faking opportunity, cognitive ability, and job type. *Personality and Individual Differences*, 52(2), 195-201.
- Tominey, S. L., O'Bryon, E. C., Rivers, S. E., & Shapses, S. (2017). Teaching emotional intelligence in early childhood. *YC Young Children*, 72(1), 6-14.
- Tracy, J. L., Robins, R. W., & Schriber, R. A. (2009). Development of a FACS-verified set of basic and self-conscious emotion expressions. *Emotion*, 9(4), 554.
- Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and teacher education*, 17(7), 783-805.
- Tschannen-Moran, M., Hoy, A. W., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of educational research*, 68(2), 202-248.
- Turnipseed, D. L. (2018). Emotional intelligence and OCB: The moderating role of work locus of control. *The Journal of social psychology*, 158(3), 322-336.
- Turnipseed, D. L., & Vandewaa, E. A. (2012). Relationship between emotional intelligence and organizational citizenship behavior. *Psychological reports*, 110(3), 899-914.
- Tuxford, L. M., & Bradley, G. L. (2015). Emotional job demands and emotional exhaustion in teachers. *Educational Psychology*, 35(8), 1006-1024.

- Van Dyne, L., Graham, J. W., & Dienesch, R. M. (1994). Organizational citizenship behavior: Construct redefinition, measurement, and validation. *Academy of Management Journal*, 37(4), 765-802.
- Van Yperen, N. W., Elliot, A. J., & Anseel, F. (2009). The influence of mastery-avoidance goals on performance improvement. *European Journal of Social Psychology*, 39(6), 932-943.
- Vandekerckhove, J., Matzke, D., & Wagenmakers, E. J. (2014). *Model comparison and the principle of parsimony* (pp. 1-29). eScholarship, University of California.
- VandeWalle, D. (2001). Goal orientation:: Why wanting to look successful doesn't always lead to success. *Organizational Dynamics*, 30(2), 162-171.
- Vanlessen, N., Rossi, V., De Raedt, R., & Pourtois, G. (2013). Positive emotion broadens attention focus through decreased position-specific spatial encoding in early visual cortex: evidence from ERPs. *Cognitive, Affective, & Behavioral Neuroscience*, 13(1), 60-79.
- Vesely, A. K., Saklofske, D. H., & Leschied, A. D. (2013). Teachers—The vital resource: The contribution of emotional intelligence to teacher efficacy and well-being. *Canadian Journal of School Psychology*, 28(1), 71-89.
- Vesely, A. K., Saklofske, D. H., & Nordstokke, D. W. (2014). EI training and pre-service teacher wellbeing. *Personality and Individual Differences*, 65, 81-85.
- Wagner, A. K., Soumerai, S. B., Zhang, F., & Ross-Degnan, D. (2002). Segmented regression analysis of interrupted time series studies in medication use research. *Journal of clinical pharmacy and therapeutics*, 27(4), 299-309.
- Walia, P., & Tulsi, P. K. (2014). Emotional intelligence and occupational stress of college teachers. *Journal of Organisation and Human Behaviour*, 3(1).
- Wang, L., & Orchard, J. (2017). Investigating the evolution of a neuroplasticity network for learning. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 49(10), 2131-2143.

- Wang, Q., & Ng, F. F. Y. (2012). Chinese students' implicit theories of intelligence and school performance: Implications for their approach to schoolwork. *Personality and Individual Differences, 52*(8), 930-935.
- Wang, Y., & Kong, F. (2014). The role of emotional intelligence in the impact of mindfulness on life satisfaction and mental distress. *Social indicators research, 116*(3), 843-852.
- Warne, R. T. (2014). A primer on multivariate analysis of variance (MANOVA) for behavioral scientists. *Practical Assessment, Research & Evaluation, 19*.
- Warren, F., Mason-Apps, E., Hoskins, S., Devonshire, V., & Chanvin, M. (2019). The relationship between implicit theories of intelligence, attainment and socio-demographic factors in a UK sample of primary school children. *British Educational Research Journal, 45*(4), 736-754.
- Waters, L. (2011). A review of school-based positive psychology interventions. *The Educational and Developmental Psychologist, 28*(2), 75-90.
- Webb, C. A., Schwab, Z. J., Weber, M., DelDonno, S., Kipman, M., Weiner, M. R., & Killgore, W. D. (2013). Convergent and divergent validity of integrative versus mixed model measures of emotional intelligence. *Intelligence, 41*(3), 149-156.
- Weissberg, R. P., Durlak, J. A., Domitrovich, C. E., & Gullotta, T. P. (2015). Social and emotional learning: Past, present, and future.
- Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of management, 17*(3), 601-617.
- Willmer, M., Westerberg Jacobson, J., & Lindberg, M. (2019). Exploratory and confirmatory factor analysis of the 9-Item Utrecht Work Engagement Scale in a multi-occupational female sample: a cross-sectional study. *Frontiers in psychology, 10*, 2771.
- Wilson, C. (2014). Semi-structured interviews. *Interview techniques for UX practitioners, 1*, 23-41.



- Wolff, S.B. (2005), Emotional Competence Inventory: Technical Manual, The Hay Group, Boston, MA.
- Wong, C. S., & Law, K. S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *The leadership quarterly*, 13(3), 243-274.
- Wong, C. S., & Law, K. S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *The leadership quarterly*, 13(3), 243-274.
- Wong, C. S., Law, K. S., & Wong, P. M. (2004). Development and validation of a forced choice emotional intelligence measure for Chinese respondents in Hong Kong. *Asia Pacific Journal of Management*, 21(4), 535-559.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational behavior*, 74(3), 235-244.
- Yadav, P., & Punia, B. K. (2013). Organisational citizenship behavior: A review of antecedent, correlates, outcomes and future research directions. *International Journal of Human Potential Development*, 2(2), 1-19.
- Yan, X., Yang, K., Su, J., Luo, Z., & Wen, Z. (2018). Mediating role of emotional intelligence on the associations between core self-evaluations and job satisfaction, work engagement as indices of work-related well-being. *Current Psychology*, 37(3), 552-558.
- Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational psychologist*, 47(4), 302-314.
- Yeager, D. S., Johnson, R., Spitzer, B. J., Trzesniewski, K. H., Powers, J., & Dweck, C. S. (2014). The far-reaching effects of believing people can change: implicit theories of personality shape stress, health, and achievement during adolescence. *Journal of personality and social psychology*, 106(6), 867.
- Yeager, D. S., Romero, C., Paunesku, D., Hulleman, C. S., Schneider, B., Hinojosa, C., ... & Dweck, C. S. (2016). Using design thinking to improve psychological interventions: The case of the

- growth mindset during the transition to high school. *Journal of educational psychology*, 108(3), 374.
- Yeager, D. S., Trzesniewski, K. H., & Dweck, C. S. (2013). An implicit theories of personality intervention reduces adolescent aggression in response to victimization and exclusion. *Child development*, 84(3), 970-988.
- Yeager, D. S., & Dweck, C. S. (2020). What can be learned from growth mindset controversies? *American psychologist*, 75(9), 1269.
- Yin, H. B., Lee, J. C. K., & Zhang, Z. H. (2013). Exploring the relationship among teachers' emotional intelligence, emotional labor strategies and teaching satisfaction. *Teaching and teacher education*, 35, 137-145.
- Yin, H., Han, J., & Lu, G. (2017). Chinese tertiary teachers' goal orientations for teaching and teaching approaches: The mediation of teacher engagement. *Teaching in Higher Education*, 22(7), 766-784.
- Yoke, L. B., & Panatik, S. A., (2015). Emotional Intelligence and Job Performance among School Teachers. *Asian Social Science*, 11 (13), 227-234, ISSN 1911-2017 E-ISSN 1911-2025
- Young, M. E., & Ryan, A. (2020). Postpositivism in health professions education scholarship. *Academic Medicine*, 95(5), 695-699.
- Yozgat, U., Yurtkoru, S., & Bilginoğlu, E. (2013). Job stress and job performance among employees in public sector in Istanbul: examining the moderating role of emotional intelligence. *Procedia-Social and behavioral sciences*, 75, 518-524.
- Yuan, R., & Lee, I. (2016). 'I need to be strong and competent': A narrative inquiry of a student-teacher's emotions and identities in teaching practicum. *Teachers and Teaching*, 22(7), 819-841.
- Yuen Onn, C., Nordin bin Yunus, J., Yusof, H. B., Moorthy, K., & Ai Na, S. (2018). The mediating effect of trust on the dimensionality of organisational justice and organisational citizenship behaviour amongst teachers in Malaysia. *Educational Psychology*, 38(8), 1010-1031.

- Yunus, N. H., Ishak, N. A., Mustapha, R. M. R., & Othman, A. K. (2010). Displaying Employees' Organisational Citizenship Behaviour at the Workplace: The Impact of Superior's Emotional Intelligence and Moderating Impact of Leader-Member Exchange. *Vision, 14*(1-2), 13-23.
- Zee, M., & Koomen, H. M. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational research, 86*(4), 981-1015.
- Zeidner, M., Matthews, G., & Roberts, R. D. (2012). The emotional intelligence, health, and well-being nexus: What have we learned and what have we missed?. *Applied Psychology: Health and Well-Being, 4*(1), 1-30.
- Zeidner, M., Roberts, R. D., & Matthews, G. (2008). The science of emotional intelligence: Current consensus and controversies. *European Psychologist, 13*(1), 64-78.
- Zeinabadi, H. (2010). Job satisfaction and organizational commitment as antecedents of organizational citizenship behavior (OCB) of teachers. *Procedia-Social and Behavioral Sciences, 5*, 998-1003.
- Zeinabadi, H. (2010). Job satisfaction and organizational commitment as antecedents of organizational citizenship behavior (OCB) of teachers. *Procedia-Social and Behavioral Sciences, 5*, 998-1003.
- Zeng, G., Chen, X., Cheung, H. Y., & Peng, K. (2019). Teachers' growth mindset and work engagement in the Chinese educational context: Well-being and perseverance of effort as mediators. *Frontiers in psychology, 10*, 839.
- Zeng, G., Chen, X., Cheung, H. Y., & Peng, K. (2019). Teachers' growth mindset and work engagement in the Chinese educational context: Well-being and perseverance of effort as mediators. *Frontiers in psychology, 10*, 839.
- Zeng, G., Hou, H., & Peng, K. (2016). Effect of growth mindset on school engagement and psychological well-being of Chinese primary and middle school students: The mediating role of resilience. *Frontiers in psychology, 7*, 1873.

Zhu, Y., Liu, C., Guo, B., Zhao, L., & Lou, F. (2015). The impact of emotional intelligence on work engagement of registered nurses: The mediating role of organisational justice. *Journal of clinical nursing*, 24(15-16), 2115-2124.

## APPENDICES

### APPENDIX 1: ETHICAL APPROVAL- UNIVERSITY OF NOTTINGHAM



DPAP Committee

17/10/2018

Supervisor: Angel Santos

Applicant : Thomzonke Zungu

Project: Project Id An Emotionally Intelligent Mindset: Effects of an intervention on teachers' Emotional Intelligence, Mindsets, Organisational Citizenship Behaviour, Work Engagement and Burnout

A favourable opinion is given to the above named study on the understanding that the applicants conduct their research as described in the above numbered application. Applicants need to adhere to all conditions under which the ethical approval has been granted and use only materials and documentation that have been approved. If any amendments to the study are required, an amendment should be submitted to the committee for approval. An end of study form will be required once the study is complete.

yours

A handwritten signature in black ink that reads "David Daley".

Professor David Daley

Co-Chair of DPAP Ethics Subcommittee

A handwritten signature in black ink that reads "Amanda Griffiths".

Professor Amanda Griffiths

Co-Chair of DPAP Ethics Subcommittee

**Date Sent:** 13 November 2018 15:50  
**From:** ERM  
**To:** <angeli.santos@nottingham.ac.uk>  
**CC:** <msxtz3@nottingham.ac.uk>  
**Subject:** **An Emotionally Intelligent Mindset: Effects of an intervention on teachers' Emotional Intelligence, Mindsets, Organisational Citizenship Behaviour, Work Engagement and Burnout 0235**

---



Dear Dr Angeli Santos & Miss Thomzonke Zungu

Your study has been granted ethical approval, an approval letter is attached to this e-mail. Please keep the approval letter safe as you may be required to include it in your thesis. Please also remember that if you need to make any changes to the study that an ethical amendment will be required

Yours sincerely

Professor David Daley & Professor Amanda Griffiths

Chair's of the DPAP ethics sub-committee



DPAP Committee

31/10/2019

Supervisor: Angeli Santos

Applicant : Thomzonke Zungu

Project: Project Id Effects of an intervention on Emotional Intelligence and Mindsets: A Qualitative Study

A favourable opinion is given to the above named study on the understanding that the applicants conduct their research as described in the above numbered application. Applicants need to adhere to all conditions under which the ethical approval has been granted and use only materials and documentation that have been approved. If it is proposed that if an approved project is subsequently subject to any significant change (for example to the date or place of data collection, or measures used), an Amendment Form should be submitted. This can be done in 'Create Sub Form' in the Actions Menu on the left hand side of the page on the on-line system: Select 'Amendment Form'.

yours

Professor David Daley

Co-Chair of DPAP Ethics Subcommittee

Professor Amanda Griffiths

Co-Chair of DPAP Ethics Subcommittee

## APPENDIX 2: PERMISSION FROM THE TWO UNIVERSITIES



University of Zululand, Private Bag X1001, KwaDlangezwa, 3886  
W: [www.unizulu.ac.za](http://www.unizulu.ac.za)

T: +27 35 902 6731 E: [DlelanaM@unizulu.ac.za](mailto:DlelanaM@unizulu.ac.za)  
Deputy Vice-Chancellor: Research and Innovation

Thomzonke Zungu  
School of Medicine  
University of Nottingham  
Medical School  
Nottingham  
NG7 2UH  
22 May 2019

Dear Thomzonke Zungu

**REQUESTING TO CONDUCT RESEARCH AT UNIZULU: "AN EMOTIONALLY INTELLIGENT MINDSET:  
EFFECTS OF AN INTERVENTION ON PRESERVICE TEACHERS' EMOTIONAL INTELLIGENCE, MINDSET,  
ORGANIZATIONAL CITEZENSHIP BEHAVIOUR, WORK ENGAGEMENT AND BURNOUT."**  
Your letter to me, refers.

I hereby grant approval for you to conduct part of your research at UNIZULU, as per the methodologies stated in your research proposal and in terms of the data collection instruments that you have submitted. I note also that University of Nottingham, has issued an ethical clearance certificate and having read the documentation, I am happy to accept that certificate.

You may use this letter as authorization when you approach the relevant persons. Please note that permission is based on the documentation that you have submitted. Should you revise your research instruments, or use additional instruments, you must submit those to us as well.


I wish you well in your research.

Yours sincerely,

UNIVER. CHAIRPERSON  
UNIVERSITY OF ZULULAND RESEARCH  
ETHICS COMMITTEE (UZREC)  
REG NO: UZREC 171110-30

22-05-2019

RESEARCH & INNOVATION OFFICE

  
Professor Gideon De Wet  
Chairperson: University of Zululand Research Ethics Committee  
Deputy Vice-Chancellor: Research and Innovation



Directorate for Research and Postgraduate Support  
Durban University of Technology  
Tromso Annexe, Steve Biko Campus  
P.O. Box 1334, Durban 4000  
Tel.: 031-3732576/7  
Fax: 031-3732946

10<sup>th</sup> November 2018

Ms Thomzonke Zungu  
c/o Division of Psychiatry & Applied Psychology  
University of Nottingham

Dear Ms Zungu

**PERMISSION TO CONDUCT RESEARCH AT THE DUT**

Your email correspondence in respect of the above refers. I am pleased to inform you that the Institutional Research and Innovation Committee (IRIC) has granted full permission for you to conduct your research "An Emotionally Intelligent Mindset: Effects of an intervention on teacher's Emotional Intelligence, Mindsets, Organisational Citizenship Behaviour, Work Engagement and Burnout" at the Durban University of Technology.

The DUT may impose any other condition it deems appropriate in the circumstances having regard to nature and extent of access to and use of information requested.

We would be grateful if a summary of your key research findings can be submitted to the IRIC on completion of your studies.

Kindest regards.  
Yours sincerely

A handwritten signature in cursive script that reads 'Carin Napier'.

PROF CARIN NAPIER  
DIRECTOR (ACTING): RESEARCH AND POSTGRADUATE SUPPORT DIRECTORATE





## APPENDIX 3: PARTICIPANT INFORMATION SHEETS

# PARTICIPANT INFORMATION

## STUDENT RESEARCH PROJECT ETHICS REVIEW

Division of Psychiatry & Applied Psychology

Project Title: *An Emotionally Intelligent Mindset: Effects of an Intervention on Preservice Teachers' Mindsets, Emotional Intelligence, Organisational Citizenship Behaviour, Work Engagement and Burnout*

Researcher: *Thomzonke Zungu; e-mail address: Thomzonke.Zungu@nottingham.ac.uk*

Supervisor: *Dr Angeli Santos; e-mail address: Angeli.Santos@nottingham.ac.uk*

Ethics Reference Number: 0235

We would like to invite you to take part in a research *about the effects of a training program*. Before you begin, we would like you to understand why the research is being done and what it involves for you.

### What is the purpose of this study?

*The purpose of this study is to investigate the effects of a learning and motivation training program.*

### Why have I been invited?

*You have been invited because you are a student teacher. As a student teacher, once you become qualified, you are expected to constantly communicate with students, colleagues and parents. You will not be expected to impart knowledge, but you will also be expected to motivate and inspire pupils.*

### Do I have to take part?

*It is up to you to decide whether or not to take part. And you may change your mind about being involved at any time or decline to answer a particular question. You are free to withdraw at any point before or during the study without giving a reason. However, once you have completed the survey and submitted your answers, data cannot be withdrawn as it will be impossible to identify your answers.*

### What will I be asked to do?

*If you choose to take part, you will be asked to attend the training program sessions. The training program consists of **four 1-hour sessions (approximately)**, running on four consecutive days. You will be asked to fill in the questionnaires four weeks before the training program, immediately before the training program, four weeks after the training program and a further follow up will be conducted four weeks after. During the training program you will be asked to participate by doing activities and by also applying some of the content in your work. However, we understand your busy schedule, and thus should you want to be part of the study but due to some factors will not be able to attend sessions, you will be asked complete the questionnaires four weeks after the commencement of the training sessions and during the follow-up.*



### **Will the research be of any personal benefit to me?**

*The findings of this research may not be of direct benefit to you but may be used to inform teaching practices by introducing new ways of communicating and interacting with students. Furthermore, research findings may also ensure quality of life at schools by promoting prosocial behaviour, thus contributing to the well-being of both teachers and students.*

### **Are there any possible disadvantages or risks in taking part?**

*No. This study does not include any elements that might make you upset or feel uncomfortable in any way.*

### **What will happen to the information I provide?**

*Results of this study will be treated with strictest confidentiality. You are assured that you will remain anonymous and that you will not be indirectly identified via location or demographic data in all outcomes resulting from the research. In cases where you provided your personal information, such as names, these will be removed to ensure anonymity. The researcher of the study and the named supervisor will have access to the personal data provided. Data from this study might be disseminated in the form of academic reports or publications but will remain non-identifiable and anonymous. You are also assured that all the information shared during the training program will remain confidential and will not be shared with anyone, including the gatekeeper. Should you wish to be informed about the overall findings of this research, do not hesitate to contact the researcher, in that case, a summary of the findings will be communicated with you in the form of a report.*

*At the end of the project, all raw data will be kept securely by the University under the terms of its data protection policy (2018) which reflects the General Data Protection Regulation (GDPR) (2018). Data will be stored in a form which does not permit personal identification. It will be kept for as long as it is needed, and will only be used in a way that is adequate, relevant and limited to only what is necessary.*

*If you have any questions or concerns, please don't hesitate to ask. We can be contacted before and after your participation at the email addresses above.*

### **What if there is a problem?**

If you have any queries or complaints, please contact the student's supervisor in the first instance. If this does not resolve your query, please write to the Administrator to the Division of Psychiatry & Applied Psychology's Research Ethics Sub-Committee ([MS-DPAPEthics@nottingham.ac.uk](mailto:MS-DPAPEthics@nottingham.ac.uk)) who will pass your query to the Chair of the Committee.

No harm likely, but if anything in the sessions raises anything you consider upsetting, then please contact Lifeline Pietermaritzburg on **0861322322** for support.

# **PARTICIPANT INFORMATION**

## **STUDENT RESEARCH PROJECT ETHICS REVIEW**

Division of Psychiatry & Applied Psychology

Project Title: *Effects of an Intervention on Preservice Teachers' Mindsets and Emotional Intelligence: A Qualitative Study*

Researcher: *Thomzonke Zungu; e-mail address: Thomzonke.Zungu@nottingham.ac.uk*

Supervisor: *Dr Angeli Santos; e-mail address: Angeli.Santos@nottingham.ac.uk*

Ethics Reference Number:

We would like to invite you to take part in a research *about the effects of a training program*. Before you begin, we would like you to understand why the research is being done and what it involves for you.

### **What is the purpose of this study?**

*The purpose of this study is to investigate the effects of a training program. It is to understand fully your experiences and perceptions about the emotional intelligence/mindset intervention you attended.*

### **Why have I been invited?**

*You have been invited because you participated in the training programme. Your personal experiences, opinions and views are valuable in order for us to understand the overall impact of this training program. Your views and ideas may also be used to inform future training programs.*

### **Do I have to take part?**

*It is up to you to decide whether or not to take part. And you may change your mind about being involved at any time or decline to answer a particular question. You are free to withdraw at any point before or during the study without giving a reason. However, once you have completed the interview and non-identifiable quotations have been submitted for academic reports or publications, data cannot be withdrawn.*

### **What will I be asked to do?**

*You will be asked to participate in a telephonic semi-structured interview. The interview is approximately an hour long. The interview is about an hour long. The focus of this interview will be mainly on your experiences and perceptions about the training program you attended.*

### **Will the research be of any personal benefit to me?**

*The findings of this research may not be of direct benefit to you but may be used to inform future development of similar training programs.*

### **Are there any possible disadvantages or risks in taking part?**

No. This study does not include any elements that might make you upset or feel uncomfortable in any way.

#### **What will happen to the information I provide?**

*Results of this study will be treated with strictest confidentiality. The researcher of the study and the named supervisor will have access to the personal data provided. Data from this study might be disseminated in the form of academic reports or publications but will remain non-identifiable and anonymous. Anonymous quotes might also be used to justify the themes gathered in the data. Your interview will be transcribed verbatim. Should you wish to have your transcription, do not hesitate to contact the researcher.*

*At the end of the project, all raw data will be kept securely by the University under the terms of its data protection policy (2018) which reflects the General Data Protection Regulation (GDPR) (2018). Data will be stored in a form which does not permit personal identification. It will be kept for as long as it is needed, and will only be used in a way that is adequate, relevant and limited to only what is necessary.*

*If you have any questions or concerns, please don't hesitate to ask. We can be contacted before and after your participation at the email addresses above.*

#### **What if there is a problem?**

If you have any queries or complaints, please contact the student's supervisor in the first instance. If this does not resolve your query, please write to the Administrator to the Division of Psychiatry & Applied Psychology's Research Ethics Sub-Committee ([MS-DPAPEthics@nottingham.ac.uk](mailto:MS-DPAPEthics@nottingham.ac.uk)) who will pass your query to the Chair of the Committee.

No harm likely, but if anything in the sessions raises anything you consider upsetting, then please contact Lifeline Pietermaritzburg on **0861322322** for support.

## APPENDIX 4: CONSENT FORMS

### PARTICIPANT CONSENT

#### STUDENT RESEARCH PROJECT ETHICS REVIEW Division of Psychiatry & Applied Psychology

Project Title: *An Emotionally Intelligent Mindset: Effects of an intervention on preservice teachers' Emotional Intelligence, Mindset, Organisational Citizenship Behaviour, Work Engagement and Burnout*

Researcher: Thomzonke Zungu, e-mail address: Thomzonke.Zungu@nottingham.ac.uk

Supervisor: *Dr Angeli Santos, e-mail address: Angeli.Santos@nottingham.ac.uk*

Ethics Reference Number: 0235

- Have you read and understood the Participant Information? Yes/No
- Do you agree to take part in a research study about the effects of a training program? Yes/No
- Do you know how to contact the researcher if you have questions about this study? Yes/No
- Do you understand that you are free to withdraw from the study without giving a reason? Yes/No
- Do you understand that for anonymous questionnaire studies, once you have completed the study and submitted your answers, the data cannot be withdrawn? Yes/No
- Do you give permission for your data from this study to be shared with researchers in the future provided that your anonymity is protected? other Yes/No
- Do you understand that non-identifiable data from this study including quotations might be used in academic research reports or publications? Yes/No
- I confirm that I am 18 years old or over Yes/No

---

Signature of Participant ..... Date .....

Name (in capitals) .....

This consent form will be detached from the completed questionnaire and stored separately. Your answers will not be identifiable

# PARTICIPANT CONSENT

## STUDENT RESEARCH PROJECT ETHICS REVIEW Division of Psychiatry & Applied Psychology

Project Title: *Effects of an intervention on preservice teachers' Emotional Intelligence and Mindset: A Qualitative Study*

Researcher: Thomzonke Zungu, e-mail address: Thomzonke.Zungu@nottingham.ac.uk

Supervisor: *Dr Angeli Santos*, e-mail address: *Angeli.Santos@nottingham.ac.uk*

Ethics Reference Number:

- Have you read and understood the Participant Information? Yes/No
- Do you agree to take part in a research study about the effects of a training ? Yes/No
- Do you know how to contact the researcher if you have questions about this study? Yes/No
- Do you understand that you are free to withdraw from the study without giving a reason? Yes/No
- Do you give permission for your interview to be audio recored? Yes/No
- Do you give permission for your data from this study to be shared with other researchers in the future provided that your anonymity is protected? Yes/No
- Do you understand that non-identifiable data from this study including quotations might be used in academic research reports or publications? Yes/No
- Do you understand that once non-identifiable quotations have been submitted for academic reports or publications, the data cannot be withdrawn?
- I confirm that I am 18 years old or over Yes/No

---

Signature of Participant .....

Date .....

Name (in capitals) .....

This consent form will be detached from the completed questionnaire and stored separately. Your answers will not be identifiable

Version -6 March 2018

## APPENDIX 5: PERMISSION TO USE MINDSETWORKS MATERIALS & THE KIRKPATRICK EVALUATION FORM



Mindset Works, Inc.  
340 S. Lemon Ave. #6463  
Walnut, CA 91789

### Permission for use of copyright material

#### To Whom It May Concern:

We Grant Thomzonke Zungu (University of nottingham- Nottingham, UK) permission to use "[You can Grow your Intelligence](#)" (Mindset Works, Inc. copyright material) in print form for a study regarding effects of a Growth Mindset intervention on teachers. One condition is that you use the version of the article found [here](#), and keep all branding, copyright, and website information intact.

Also, note that we don't have rights to sublicense the 2 Fotosearch images used in the article based on our reading of the standard license that we acquired, so we can't give you permission for those. You would need to purchase a license for the images. You can do so quite inexpensively at [www.fotosearch.com](http://www.fotosearch.com). The images that were used are identified by the following ID numbers: K10556031 and K6235139.

We also are providing permission to use the below:

1. The Growth Mindset Framing Tool
2. The Growth Mindset Feedback Tool
3. Effective Effort Rubric
4. The introduction- Video (on MindsetWorks Youtube site)
5. The Malleable Mind Video (on MindsetWorks Youtube site)

All copyright statements must remain intact.

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Date: 5/6/17

Approved By: Elisha Perez

Signed:

Mindset Works, Inc.

Support and Operations Team

If you have any questions please email us at [support@mindsetworks.com](mailto:support@mindsetworks.com) or call us at +1-888-344-6463.

Wendy Kirkpatrick <[information@kirkpatrickpartners.com](mailto:information@kirkpatrickpartners.com)> ↩ ⏪ → ...  
Wed 2018/09/05 02:11

To: Thomzonke Zungu

Cc: [permissions@kirkpatrickpartners.com](mailto:permissions@kirkpatrickpartners.com) + 1 other

Dear Thomzonke,

Thank you for reaching out. You have permission to use our tool in your research. Please retain the copyright warning and attribute it to [Kirkpatrick Partners, LLC](#), and reference that you obtained it at [kirkpatrickpartners.com](http://kirkpatrickpartners.com)

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## APPENDIX 6: INTERVIEW SCHEDULE

Research Questions	Interview Questions
<ul style="list-style-type: none"> <li>How does participation in this intervention affect preservice teachers' EI?</li> </ul>	<ol style="list-style-type: none"> <li>In your understanding, what is Emotional Intelligence?</li> <li>Describe your experience during and after the program? - (What impact did this training have on yourself?)</li> </ol>
<ul style="list-style-type: none"> <li>What is the impact of this intervention on preservice teachers' mindsets?</li> </ul>	<ol style="list-style-type: none"> <li>Tell me about your understanding of fixed vs growth mindset</li> <li>How did the intervention influence how you think about your personal attributes? (i.e., intelligence, personality etc.)</li> <li>Overall, do you think this training is useful in your line of work? How so?</li> </ol>
<ul style="list-style-type: none"> <li>What are preservice teachers' perceptions of the process followed in implementing this intervention?</li> </ul>	<ol style="list-style-type: none"> <li>What are your views about the strategies used to recruit participants? (What could be done to increase participation?)</li> <li>What did you enjoy most in the programme?</li> <li>What did you enjoy least in the program?</li> <li>What are your thoughts about the duration of the intervention?</li> <li>What could be done to improve the delivery of the programme? (i.e., strategies of delivery)</li> <li>How do you think the context affected the implementation of this program? (i.e., venue; the number of participants; time of day etc.)</li> <li>What information could be added to make this intervention more effective?</li> <li>What additional support would you need to apply this knowledge effectively?</li> </ol> <p>Any additional comments?</p>



## APPENDIX 7: MANUAL FOR THE ORIGINAL INTERVENTION

### **SESSION 1: MINDSETS (2 hours)**

Materials needed: Presentation, laptop, projector, questionnaires, course packs for teachers, hand-outs (*Growth Mindset Framing Tool; Growth Mindset Feedback Tool; "You can grow your intelligence" article*).

#### **Presentation**

1. Welcome. Introduce yourself and affirm the purpose of the training program (5 mins)
2. Brief Introductions (5 mins)
3. Explain ethical procedures. Assure them about confidentiality and voluntariness of the study. (5 mins)
4. Hand out questionnaires and collect questionnaires (25 mins)
5. Explain the structure of the training program and explain the benefits of the training program. State ground rules and encourage teachers to commit to attending all the training sessions and participate in activities. Explain to them that the activities must be blended on their teaching activities. (5 mins)
6. On the first page of the course pack, ask teachers to write down their expectations of the training program. (5 mins)
7. Give a brief introduction about the teaching profession. Acknowledge that it is a stressful occupation. Explain the teachers' role in child development and in ensuring student motivation. (3 mins)
8. Introductory Video. Summarise the content of the video (10 mins)
9. Explain the two different mindsets held by students (fixed vs. growth mindsets). Explain mindsets in terms of abilities, goal orientation, effort and mistakes, feedback and reactions to setbacks. (10 mins)
10. The Role of Language- Explain how the way teachers speak to students influence students' mindsets. Explain this in terms of process vs. intelligence praise. Give examples. (5 mins)
11. **Activity 1:** The Growth Mindset Framing Tool and the Growth Mindset Feedback Tool. Ask teachers to read through the two handouts. For the Growth Mindset Framing Tool, teachers must extract 2 language framing points that they are going to use when in class when introducing a new topic, concept, skill or assignment. For the Growth Mindset Feedback Tool, teachers must extract one feedback language they are going to use from each situation. Give an example of the activity. Ask teachers to write down their choice of language as Personal Commitments. Teachers should share their personal commitments in pairs (20 mins).
12. The Malleable Mind- Explain how neuroscience supports the growth mindset. Video (5 mins)
13. **Activity 2 (Self-Persuasion Task)-** Ask preservice teachers to read the article "You can grow your intelligence". In their own words, ask them to write a letter to their students explaining to them how the brain can change, and how they can use it to learn new things (25 minutes).
14. Wrap- Up- Summarise the content. Explain the findings from research on growth mindset. Briefly preview the content of the following sessions. Encourage teachers to try to use their personal commitments and feed back to the group on the following sessions.

## **SESSION 2: (PERCIEVING EMOTIONS) (2 hours)**

Materials needed: Presentation, Laptop and Projector, handouts (Mood Meter); Big sheets of paper; glue; marking pens; University of California, Davis Set of Emotion Expressions (UCDSEE)

### **Presentation**

- ❖ The Ability Emotional Intelligence Model as defined by Salovey and Mayer (1990)
  - ❖ Perceiving Emotions
1. Welcome. Thank them for coming again. Debrief about the last session (5 mins)
  2. **Ice-breaker Activity (optional)**- Preservice teachers need to complete the Myers Briggs Type Indicator (MBTI) profile and share their profile with the rest of the group. The instructor to quickly explain the MBTI elements and how it may be relevant for teachers when interacting with each other and students. **(20 mins)**
  3. Introduce Ability Emotional Intelligence. Explain the four branches of Emotional Intelligence. **(15 mins)**
  4. General Discussion: Ask preservice teachers to briefly discuss in pairs why EI is important for them and how they intend to use the information that they will gain throughout the EI sessions. Teachers must share with the larger group **(5 mins)**
  5. Perceiving Emotions- Briefly define this branch of EI **(10 mins)**
  6. **Activity 2: Mood Meter**- Ask preservice teachers to mark down their current mood and reasons why they are feeling that way **(5 minutes)**. Share with your partner. For this activity, encourage preservice teachers to recognise their emotions and think of the reasons why they are feeling this way. Encourage preservice teachers to reflect on their emotions when teaching, they can do this by writing down their emotions every day or every week. This will keep them to be in control of their emotions.
  7. **Activity 3: Role Play**: How do you express your emotions? Preservice teachers will be asked to explore the way they would express their feelings towards their pupils. For this activity, preservice teachers are asked to define the situation (i.e. what did the pupil do? / What was happening?). They will be asked to replay the scenario and receive feedback from other student teachers. After the activity, explain the aim of the activity which is to be aware of how they express their emotions and how that may affect others **(30 mins)**
  8. **Activity 4**: Using the University of California Davis Set of Emotion Expressions (UCDSEE), preservice teachers will be asked to match the pictures with emotion families in groups. Ask them to think of possible reasons for different emotions and this to be shared to the larger group. **(15 mins)**
  9. **Wrap-Up**- Summarise the content. Reflections- Ask them if they have learnt anything. Briefly preview the content of the following sessions. Encourage preservice teachers to try to use their personal commitments and feed back to the group on the following sessions.

### **SESSION 3: USING AND UNDERSTANDING EMOTIONS (2 hours)**

Materials needed: Presentation, Laptop and Projector

Presentation

- ❖ Using Emotions to facilitate thinking
  - ❖ Understanding Emotions
1. Welcome. Thank them once again for attending the third session. Explain that the session will cover two branches of EI, which is ***Using Emotions to Facilitate Thinking*** and ***Understanding Emotions*** (5 mins)
  2. **Icebreaker: "Two Truths and a Lie"**. Ask them to come up with two truths/ statements/facts about themselves and one lie. Ask for a volunteer to start with two truths and one lie- have them share all three with the group. Whoever guesses the correct lie will go next. (20 mins)
  3. **Using Emotions to Facilitate Thinking**. Explain this branch of EI. Explain it in terms of how emotions influence our thinking and behaviour. (15 mins)
  4. **Activity 1: "Use of Emotion Teacher Activity"**. Ask preservice teachers to think of how the environment affects their emotions and the way they interact with each other. They must complete this activity on their course packs. After they are done, they must share their strategies with the whole group. (20 mins)
  5. **Understanding Emotions**. Explain this branch of EI. Explain the importance of understanding ones' emotions in different situations. (15 mins)
  6. **Activity 2: Video: 3<sup>rd</sup> Degree Youtube Video about Bullying**. After watching the video, preservice teachers are asked to identify their emotions towards the video and try to understand why they feel that way. Preservice teachers will be further asked to think about a challenging pupil and try to understand their feelings towards the pupil (15 mins)
  7. **Activity 3: Case Study**. Ask preservice teachers to read through the four vignettes or hypothetical scenarios and try to understand their feelings in each situation. They must think about their actions in each situation. Give them **10 minutes** to work through the scenarios individually. They must share their answers in pairs (20 mins)—Explain the importance of healthy ways of communication- understanding the needs of others (Avoiding self-deception)
  8. **Wrap Up- Summarise the content. Reflections-** Ask student teachers if they have learnt anything. Ask them to share their personal commitments in terms of the strategies they will use in their classroom. Briefly preview the content of the following sessions. Encourage them to try to use their personal commitments and feed back to the group on the following sessions.

## **SESSION 4: MANAGING EMOTIONS**

Materials needed: Presentation, Laptop and Projector; Questionnaires

### **Presentation**

- ❖ Managing Emotions
  - ❖ Emotional Lenses
  - ❖ Review all four sessions and explain the follow-up process
- 1) Welcome. Thank student teachers once again for attending the last session. Explain that the session will cover the last branch of EI which is Managing Emotions. **(5 mins)**
  - 2) Debrief about the previous sessions.
  - 3) Manage emotions. Explain this branch of EI in terms of the importance of manage ones' emotions. **(5 mins)**
  - 4) Explain emotional lenses **(10 mins)**
  - 5) **Activity: Management of Emotion Teacher Activity.** Ask student teachers to write down the triggers of their emotions and explore the strategies they use. Each student teacher (if comfortable) has to share their answers with the entire group. **(20 mins)**
  - 6) Explain the importance of managing emotions. Share some of the strategies that can be used to manage emotions. **(10 mins)**
  - 7) **Reflections.** Ask preservice teachers to share their experience during the four sessions. **(10 mins)**
  - 8) **Review all the four sessions.** Explain the follow-up actions. Explain that student teachers will be sent reminders on each session once in a week for four weeks. Tell them that they are welcome to give feedback to the instructor on some of the insights/ strategies they have/ will use (i.e. are they working or not?). **(15 mins)**
  - 9) Handout questionnaires and collect them **(25 mins)**
  - 10) Once again, thank all the student teachers for completing the sessions.

### **Four Vignettes**

You are a new teacher. Every time during lunch you feel isolated. Nobody has ever asked you to have lunch with them, thus you are always alone and hardly interact with anyone.

How do you feel? And what do you do?

The principal is not giving you any attention, but there is this one teacher who is always praised and given attention. You always come up with ideas to improve the school, but she brushes that off.

How do you feel? And what do you do?

One of your students is always troublesome. He is perceived as a bully and always distracts you whilst you teach.

How do you feel? And what do you do?

Two of your colleagues are always arguing. You feel like you are being put in the middle and wouldn't want to choose sides.

How do you feel? And what do you do?

## APPENDIX 8: MANUAL FOR THE MAIN INTERVENTION

Session	Techniques & Activities
5. Mindsets	<p>*Different mindsets were explained in terms of abilities, goal orientation, effort, mistakes, feedback and reactions to setback</p> <p>* The role of language in forming these mindsets was explained. And a video showing neuroplasticity was played. Neuroplasticity/ growth mindset was also explained in terms of the Hebbian Theory.</p> <ul style="list-style-type: none"> <li>• <b>Reflective (self-persuasion task):</b> Participants were asked to read an article titled ‘You can grow your intelligence’. After which were asked to write a letter to future students explaining how the brain develops through learning.</li> <li>• Quiz</li> </ul>
6. Emotional Intelligence/Perceiving Emotions	<p>*Icebreaker (optional): Optical Illusions: What can you see?</p> <p>*Participants were introduced to emotional intelligence. Daniel Goleman’s (1995) ‘hijacking’ was used to explain the role of emotions in cognition and behaviour. Mayer and Salovey’s (1990) emotional intelligence branches were also explained. The perceiving emotion dimension was explained in more detail.</p> <ul style="list-style-type: none"> <li>• <b>Self-awareness:</b> The facilitator described two personality preferences (i.e., introversion vs. extroversion). Participants were asked to categorise themselves based on these preferences. Introverted participants were asked to share what they appreciate about extroverted participants and vice versa.</li> <li>• <b>Discussion:</b> Participants were asked to discuss why EI is important to them</li> <li>• <b>Reflective &amp; Self-awareness (Mood Meter):</b> The mood meter was explained. On a 5-point scale, participants plotted their pleasantness and energy levels. Participants were encouraged to think about how they feel mostly when they are in the school environment. And also, about how they feel most in their personal life. They were also asked to think about the causes of their emotions</li> <li>• <b>Reflective (Replay):</b> Participants were asked to think of the way they express their emotions whether in the school environment or personal space. As part of the activity, preservice teachers were asked to think about the situation or scenario guided by questions (i.e., what was the situation? how did it affect you? how did you express your emotions e.g., verbally or nonverbally? What could you have done differently? What are other possible strategies for expressing emotions effectively?</li> </ul>
7. Using and Understanding Emotions	<p>*This session focused on using and understanding emotion EI dimensions. These dimensions were explained.</p>

## 8. Managing Emotions

- **Reflective (Three-good things activity & Generating positive emotions):** Preservice teachers were asked to list three good things (Seligman et al., 2005) that happened in the day or their lives. They were also asked to write down the strategies they use to generate positive emotions. Participants firstly discussed in pairs. Thereafter, a few participants were asked to share their strategies with the whole class.
  - **Reflective:** A video about bullying at school was shown. In groups, preservice teachers were asked to discuss what may have been the causes of the individual's (i.e., the one who was bullied) actions/behaviour. They were also asked to discuss whether the individual's action shown in the video was justified or not. Lastly, they were requested to share what could be done to eliminate bullying at schools. After their discussion, they had to report to the whole class.
  - **Reflective:** Following up on the previous activity, participants were asked to work in pairs and think about a challenging situation (e.g., a misbehaving pupil) that they had faced in the school environment. In their discussion, they have to consider these questions: what happened? How did you feel? How did you react? What could you have done differently?
- \*Debrief about the previous sessions  
\*The managing emotions EI dimension was explained.  
\* Different emotion regulation strategies were explained with an emphasis on cognitive reappraisal (Gross, 2004).
- **Reflective (Mindfulness activity):** An audio about mindfulness meditation was played. After this experience, preservice teachers were asked about how they control and manage their emotions. And they also shared and discussed their emotion management strategies.
  - A summary of all the sessions was provided
-

## APPENDIX 9: QUESTIONNAIRES

<b>Wong &amp; Law Emotional Intelligence Scale (WLEIS)</b>						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Unsure</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	I have a good sense of why I have certain feelings most of the time	1	2	3	4	5
2.	I have a good understanding of my own emotions	1	2	3	4	5
33.	I really understand what I feel	1	2	3	4	5
44.	I always know whether or not I am happy	1	2	3	4	5
55.	I always know my friends' emotions from their behaviour	1	2	3	4	5
6.	I am a good observer of others' emotions	1	2	3	4	5
7.	I am sensitive to the feelings and emotions of others	1	2	3	4	5
8.	I have a good understanding of the emotions of people around me	1	2	3	4	5
9.	I always set goals for myself and then try my best to achieve them	1	2	3	4	5
10.	I always tell myself I am a competent person	1	2	3	4	5
11.	I am self motivating person	1	2	3	4	5
12.	I would always encourage myself to try my best	1	2	3	4	5
13.	I am able to control my temper so that I can handle difficulties rationally	1	2	3	4	5
14.	I am quite capable of controlling my own emotions	1	2	3	4	5
15.	I can always calm down quickly when I am very angry	1	2	3	4	5
16.	I have good control of my own emotions	1	2	3	4	5



<b>Implicit Theory Measures (Implicit Theories of Intelligence Scale/ Implicit Person Theory Scale/ Implicit Theories of Emotion Scale)</b>							
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Mostly Disagree</b>	<b>Mostly Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	You have a certain amount of intelligence, and you really can't do much to change it	1	2	3	4	5	6
2.	Your intelligence is something about you that you can't change very much	1	2	3	4	5	6
3.	You can learn new things, but you can't really change your basic intelligence	1	2	3	4	5	6
4.	The kind of person someone is, is something very basic about them and it can't be changed very much	1	2	3	4	5	6
5.	People can do things differently, but the important parts of who they are can't really be changed	1	2	3	4	5	6
6.	Everyone is a certain kind of person, and there is not much that can be done to really change that	1	2	3	4	5	6
7.	Everyone can learn to control their emotions	1	2	3	4	5	6
8.	If they want to, people can change the emotions they have	1	2	3	4	5	6
9.	No matter how hard they try, people can't really change the emotions they have	1	2	3	4	5	6
10.	The truth is, people have very little control over their emotions	1	2	3	4	5	6



<b>Organisational Citizenship Behaviour Scale (OCB-S)</b>						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	I consume a lot of time complaining about trivial matters	1	2	3	4	5
2.	I try to avoid creating problems for other students	1	2	3	4	5
3.	I keep abreast of changes in the university	1	2	3	4	5
4.	I am always ready to lend a helping hand to those around me	1	2	3	4	5
5.	I attend functions that are not mandatory but help the university's image	1	2	3	4	5
6.	I read and keep up with the university's announcements, memos and so on	1	2	3	4	5
7.	I do not abuse the rights of others	1	2	3	4	5
8.	I willingly help others who have study related problems	1	2	3	4	5
9.	I always focus on what's wrong rather than the positive side	1	2	3	4	5
10.	My attendance at the university is above the norm	1	2	3	4	5
11.	I always find fault with what the university is doing	1	2	3	4	5
12.	I am mindful of how my behaviour affects other students	1	2	3	4	5
13.	I do not take extra breaks	1	2	3	4	5
14.	I obey university rules and regulations even when no one is watching	1	2	3	4	5
15.	I help orient new students even though it is not required	1	2	3	4	5

<b>Utrecht Work Engagement Scale (UWES-3)</b>								
		<b>Never</b>	<b>Almost Never</b>	<b>Rarely</b>	<b>Sometimes</b>	<b>Often</b>	<b>Very Often</b>	<b>Always</b>
1.	When I study, I feel like I am bursting with energy	0	1	2	3	4	5	6
2.	I am enthusiastic about my studies	0	1	2	3	4	5	6
3.	I am immersed in my studies	0	1	2	3	4	5	6