

HOW CAN WE DO POSITIVE EDUCATION BETTER?  
THE ROLE OF STUDENT INVOLVEMENT, IMPLEMENTATION,  
AND PHYSICAL ACTIVITY IN ADOLESCENT WELLBEING

Amber Jae Halliday

Bachelor of Health Science (Honours)

Thesis submitted in fulfilment of the requirements for the Degree of Doctor of  
Philosophy

School of Psychology

The University of Adelaide

July 2018



## Contents

Contents.....	i
List of Tables .....	vi
List of Figures.....	vii
Key to Abbreviations .....	viii
Abstract.....	ix
Declaration.....	xi
Acknowledgements.....	xiii
Overview of the thesis .....	1
1 Chapter 1 – Introduction and literature review .....	3
1.1 Preamble.....	3
1.2 Positive psychology .....	3
1.3 Wellbeing.....	4
1.3.1 Theories of wellbeing .....	5
1.3.1.1 The Mental Health Continuum .....	5
1.3.1.2 The European Social Survey Wellbeing Module.....	6
1.3.1.3 The Flourishing Scale .....	7
1.3.1.4 PERMA.....	7
1.3.1.5 EPOCH.....	7
1.3.1.6 Other Models of Wellbeing.....	8
1.4 Positive education .....	9
1.5 The rationale for positive education.....	11
1.5.1 Prevention of mental ill-health.....	11
1.5.2 Academic matters.....	13
1.5.3 Developing the whole child .....	14
1.6 Positive education interventions .....	15
1.6.1 School-based mental health and wellbeing: Evidence for effectiveness 16	
1.6.2 Positive education: Evidence for effectiveness .....	17
1.7 Implementation considerations for positive education .....	19
1.7.1 The choice of framework and interventions .....	20
1.7.2 Fidelity vs. adaptability .....	21
1.7.3 Provider knowledge and training .....	21
1.7.4 Provider characteristics.....	22

1.7.5	Recipient characteristics.....	23
1.7.6	Accessibility .....	24
1.7.7	Organisational factors .....	24
1.7.8	Contextual factors.....	25
1.7.9	Pragmatic concerns.....	26
1.8	Physical activity.....	26
1.8.1	Physical activity vs. sport.....	27
1.8.2	How and how much? .....	28
1.8.3	The gender gap in physical activity.....	28
1.8.4	Physical activity in positive education .....	29
1.9	Summary and research objectives .....	30
2	Chapter 2 – Exegesis .....	33
2.1	Context of research .....	33
2.1.1	Study setting.....	33
2.1.2	Ethics and consent .....	34
2.1.3	Outline of research .....	35
2.2	Study one .....	35
2.2.1	Outline .....	35
2.2.2	Rationale.....	36
2.2.3	Participatory Action Research (PAR) .....	38
2.2.3.1	Strengths of PAR .....	39
2.2.3.2	Challenges of PAR .....	40
2.2.4	Evaluation of PAR.....	40
2.2.4.1	The PAR process: quantitative evaluation .....	41
2.2.4.2	Statistical analyses .....	42
2.2.4.3	The PAR process: qualitative evaluation .....	42
2.3	Study two .....	43
2.3.1	Outline .....	43
2.3.2	Rationale.....	43
2.3.3	The Positive Education Pilot Program .....	44
2.3.4	Teacher training .....	45
2.3.5	Online data collection.....	45
2.3.5.1	Whole school measure .....	46
2.3.5.2	PEPP measure.....	47
2.3.5.3	Data screening.....	47



2.3.6	Implementation evaluation .....	48
2.4	Study three .....	56
2.4.1	Outline .....	56
2.4.2	Rationale .....	56
2.4.3	Data collection .....	57
2.4.4	Statistical analyses .....	57
2.5	Summary .....	60
3	Chapter 3 – Study 1 .....	61
3.1	Abstract .....	63
3.2	Introduction .....	64
3.3	Background .....	70
3.4	Results .....	74
3.5	Discussion .....	89
4	Chapter 4 – Study 2 .....	95
4.1	Abstract .....	99
4.2	Introduction .....	100
4.3	Method .....	107
4.4	Results .....	115
4.5	Discussion .....	125
5	Chapter 5 – Study 3 .....	132
5.1	Abstract .....	135
5.2	Introduction .....	136
5.3	Method .....	140
5.4	Results .....	144
5.5	Discussion .....	151
6	Chapter 6 – Discussion .....	157
6.1	Summary and synthesis of findings .....	157
6.2	Significance of the work: contributions to knowledge and practice .....	158
6.2.1	The increased likelihood of effective programs .....	159
6.2.2	Accessibility of positive education .....	160
6.2.3	The practical utility of involving stakeholders .....	160
6.2.4	A model for evaluating implementation of positive education .....	162
6.2.5	Elucidating the gender gap in mental health .....	162
6.2.6	The value of physical activity in positive education .....	163
6.3	Strengths and Limitations .....	164

6.4	Future direction of research .....	166
6.4.1	Empirical evidence for impact of positive education .....	166
6.4.2	Evaluation of implementation in positive education .....	167
6.4.3	Gender and mental health .....	167
6.4.4	Physical activity and mental health .....	167
6.4.5	The co-input of students and teachers.....	168
6.5	Conclusion .....	168
	References.....	171
	APPENDIX 1 .....	197
	Correspondence.....	197
	APPENDIX 2 .....	199
	Ethics approval.....	199
	Paper 1 .....	199
	Paper 2 .....	201
	Paper 3 .....	203
	Waiver of consent .....	205
	APPENDIX 3 .....	207
	Consent forms .....	207
	Paper 1 .....	207
	Paper 2 .....	208
	Paper 3 .....	209
	APPENDIX 4 .....	210
	Information sheets.....	210
	Paper 1 .....	210
	Paper 2 .....	214
	Paper 3 .....	218
	APPENDIX 5 .....	222
	PAR workshops.....	222
	APPENDIX 6 .....	237
	Reliable change indices (RCI) statistics and calculations .....	237
	RCI - EPOCH .....	237
	RCI - General Self-efficacy .....	238
	RCI – SEARS-A .....	239
	RCI – SEARS-T.....	239
	APPENDIX 7 .....	241

PEPP Session 1 .....	241
APPENDIX 8.....	248
PEPP teacher training materials used in study 2.....	248
Training outline.....	248
Positive education background information handout .....	250
Training Session 1 .....	255
Training Session 2 .....	257
Training Session 3 .....	260
APPENDIX 9.....	262
Whole school questionnaire.....	262
APPENDIX 10.....	275
Appendix of paper 2 .....	275
APPENDIX 11.....	280
Appendices (A-E) of paper 3 .....	280
APPENDIX 12.....	291
Conference poster and oral presentations stemming from the current PhD .....	291

## List of Tables

Table 2.1 .....	35
Table 2.2 .....	51
Table 2.3 .....	52
Table 2.4 .....	53
Table 2.5 .....	54
Table 2.6 .....	55
Table 3.1 .....	72
Table 3.2 .....	75
Table 3.3 .....	79
Table 3.4 .....	81
Table 3.5 .....	86
Table 3.6 .....	87
Table 4.1 .....	108
Table 4.2 .....	112
Table 4.3 .....	116
Table 4.4 .....	117
Table 4.5 .....	118
Table 4.6 .....	119
Table 5.1 .....	145
Table 5.2 .....	146
Table 5.3 .....	148
Table 5.4 .....	149
Table 5.5 .....	150

## List of Figures

<i>Figure 1.1.</i> Conceptualisation of EPOCH mapped to PERMA.....	8
<i>Figure 1.2.</i> Effect of universal approach based on the mental health spectrum, based on model of Huppert and So (2009). ....	13
<i>Figure 2.1.</i> The participatory action research cycle of inquiry.....	39
<i>Figure 2.2.</i> Organising framework illustrating categories of factors impacting positive education implementation. ....	49
<i>Figure 2.3.</i> Models examined in study three.....	59
<i>Figure 2.4.</i> Main points of connection between studies .....	60
<i>Figure 3.1.</i> Ladder of Children’s Participation adapted from Hart (1992). ....	68
<i>Figure 3.2.</i> PERMA+ as drawn by a member of the PAR group. ....	76
<i>Figure 3.3.</i> Compilation of barriers to and facilitators of wellbeing in the school community interview data (N=47, age range=14-58).....	78
<i>Figure 3.4.</i> The final positive education logo design. ....	82
<i>Figure 3.5.</i> The positive education page of 2016 school diary.....	83
<i>Figure 3.6.</i> A screenshot of the positive education video produced by PAR students (N=10).....	84
<i>Figure 4.1.</i> Organizing framework illustrating factors impacting the success of the implementation of positive education. ....	103
<i>Figure 4.2.</i> Average depression (top) and anxiety (bottom) scores with bootstrapped 95% CI <sub>BCa</sub> at baseline (T1), after group 1 participated in the PEPP (T2) and after group 2 participated in the PEPP (T3).....	120
<i>Figure 4.3.</i> Illustration of implementation factors impacting the intervention, based on the different data sources and perspectives, mapped within the context of our overlying organizing framework. ....	127

## Key to Abbreviations

DASS-21 – The Depression Anxiety Stress Scale

CD-RISC – The Connor-Davidson Resilience Scale

DECD – The Department of Education and Child Development

EBP – Evidence-based practice

EBPAS – Evidence-Based Practice Attitude Scale

EPOCH – The EPOCH measure of adolescent wellbeing

F – Female

GSE – the General Self-efficacy Scale

HREC – The University of Adelaide Human Research Ethics Committee

M – Male

N – Total number in sample

PAQ-A – The Physical Activity Questionnaire for Adolescents

PAR – Participatory action research

PEI – Positive education intervention

PEP – Positive education practice

PEPP – Positive education pilot program

PPI – Positive psychology intervention

RCI – Reliable change indices

SDT – Self-Determination Theory

SEARS – The Social Emotional Assets and Resilience Scales

SD – Standard deviation

SEL – Social and emotional learning

TSES – Teacher Self-efficacy Scale

## Abstract

A growing number of Australian schools are adopting programs and practices to support student mental health and wellbeing. Positive education is an umbrella term for the variety of programs, curricula and strategies aimed at proactively supporting mental health alongside education. It is characterised by its incorporation of concepts from positive psychology, the scientific study of optimal development. However, there is a large gap between research that supports interventions used in positive education and its successful real-world practice in schools. There are many factors and considerations in the ‘doing’ of positive education that may impact its desired outcome. This thesis provides a pragmatic exploration of considerations and solutions in the implementation of positive education. Three independent yet related research papers were produced.

Paper one examined the value of student involvement in the inauguration of positive education at an Australian public school (N=10), using a participatory action research (PAR) approach. By using a process that directly incorporated student voices and leadership, the school benefited from an increased understanding of students’ wellbeing and pedagogic needs, aiding in intervention fit. Student-led communication laid the foundation for student ownership and buy-in for a subsequent pilot program. Students who conducted the PAR reported increases in competencies, autonomy, engagement and self-efficacy. Findings suggest involving students using PAR is a promising, accessible, and personally beneficial approach to the implementation of positive education.

In addition to intervention fit, recipient buy-in, and accessibility; many other factors can impact the way in which an evidence-informed practice or program is conducted in the real world. Paper two further investigated factors impacting the practice of a positive education pilot program (PEPP) at the same school, along with evaluating the impact of the program (N = 143). The impact of provider (teacher), recipient (student), intervention (PEPP), organisational (school) and contextual factors were systematically explored using mixed methods. Findings suggest the PEPP may have buffered students from declining mental health during the school year. Recipient characteristics, organisational support, stakeholder input, and provider

enthusiasm were all thought to have impacted PEPP outcomes. By exploring the implementation of a positive education intervention, challenges and opportunities of the practice of positive education in the real world were identified.

Individual factors can also impact upon student needs and how they experience a positive education intervention. Paper three examined how gender, physical activity, and mental health intersect. Using four years of students' cross-sectional data (N=1,756, age 13-18), the study examined gender as a moderator of the link between physical activity and mental health, and physical activity as a mediator between gender and mental health. Findings indicate males and females derive similar mental health benefit from physical activity, and suggest a lack of physical activity may partially explain adolescent females' poorer mental health than males'. Subsequent positive education initiatives may benefit from directly including physical activity.

Taken together, these manuscripts (one published, two under review at the time of final submission) underscore the importance of context in adolescent mental health and wellbeing. It is hoped this research can help to progress adolescent mental health and wellbeing in Australian schools.



## Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

I acknowledge that copyright of published works contained within this thesis resides with the copyright holder(s) of those works. I also give permission for the digital version of my thesis to be made available on the web, via the University's digital research repository, the Library Search and also through web search engines, unless permission has been granted by the University to restrict access for a period of time.

I acknowledge the support I have received for my research through the provision of an Australian Government Research Training Program Scholarship.

Published works;

Halliday, A. J., Kern, M. L., Garrett, D. K., & Turnbull, D. A. (2018). The student voice in well-being: a case study of participatory action research in positive education. *Educational Action Research*, 1-24. doi:10.1080/09650792.2018.1436079

Amber Jae Halliday

Signed:

Date: 19/1/19

I, David Garrett, give permission for the papers I co-authored to be included in this thesis.

Signed:

Date: 21/1/19

I, Margaret (Peggy) Kern, give permission for the papers I co-authored to be included in this thesis.

Signed:

Date: 20/1/19

I, Deborah Turnbull, give permission for the papers I co-authored to be included in this thesis.

Signed:

Date: 21/1/19

## Acknowledgements

To strive toward a PhD is a reference point in life. And I have many people to thank who helped me through it.

My primary supervisor Deb, whose office we were luckily to work in, I thank you. I will never forget your reaction to my news that I would give birth to my first child in the first year of my candidature – it was unwavering support and genuine joy. The support extended to my family's move to the United States in the last year of my candidature. Deb I thank you for your flexibility, your political insight and your realistic optimism. Peggy, whose expertise and acumen in my chosen area of study I felt so fortunate to secure, I thank you. Your honesty and insight helped me to believe in my own ability, your high-functioning 'ramblings' were of enormous value, and your excellent statistical advice and editing expertise helped me publish instead of perish. I am immensely grateful.

My fantastic office, with Julia and Vic, a hotbed of progressive feminism and opinion – I loved it. I hope our conversations continue well beyond the office. I could only hope to stand on the shoulders of those who came before me; Clare, Ethel, Amy – what strong inspirational women, all of them. There were also strong, smart women who first inspired me to go down this path – Dr Nadia Corsini leading them.

Thank you too to my colleagues at the University of Adelaide; Prof Paul Delfabbro, Dr Amanda LeCouter, Angela, Kylie, Deidre. I am also deeply grateful to Blackwood High School. I thank your staff, parents and most of all your students, for allowing me to research your school. I hope you too have derived value from this work. And David Garrett, how fortunate I am to have worked with you and benefited from your sound perspective on education. Thank you.

My parents – I couldn't have achieved what I have in my life without you. Mum and dad, I am so lucky to have been your daughter. I hope to make you proud.

Mello, my partner in life, father to my child. How can I thank you for being with me? I strive in every way I can, and you are on the frontlines of my relentless conscientiousness. Yet you stand with me.

And Monty, my darling boy. With this I hope to inspire you too to strive, to surround yourself with excellent support, love and inspiration, and to be the best version of you that you can be.



## Overview of the thesis

The current thesis is presented in publication format which, according to guidelines, comprises a portfolio of publications which have been published and/or submitted for publication and/or comprise unpublished and un-submitted work written in a manuscript style (Adelaide Graduate Centre, 2018). Manuscripts within the thesis must be closely related in terms of subject matter, form a cohesive research narrative, and must derive from research undertaken within candidature.

The program of research that forms the basis of this PhD sought to investigate considerations in the practice of school-based mental health and wellbeing programs and interventions, namely positive education. Positive education is an umbrella term for the variety of programs, curricula and strategies aimed at proactively supporting mental health alongside education, and there is enormous enthusiasm for it in Australia. However, there is a large gap between the research supporting such interventions, and their successful practice in schools. Many interventions in positive education have been informed by the concepts and research of positive psychology, but a greater understanding of their *implementation* is needed. Implementation refers to how a practice or program is 'done' or put into practice, and an implementation 'challenge', 'factor' or 'consideration' is a component of implementation that is likely to impact outcomes of the intervention (Forman et al., 2013). Considerations faced by schools implementing positive education form the basis of this thesis. Study of these can help us to discover how to 'do' positive education better.

Chapter 1 reviews the literature, providing an introduction to positive psychology, wellbeing and positive education. The 'why', the 'how' and the implementation considerations of positive education are then discussed. Chapter 2 provides an exegesis which aims to contextualise each piece of research and provide additional information and rationale for decisions on methodology used in studies, which was not discussed in published / submitted papers. Chapters 3, 4 and 5 contain the three independent yet related journal articles that address the overarching aim of the thesis. First, I examine the utility of student involvement, using a framework of participatory action research, in the initial stages of a school's positive education

journey. Second, I explore a positive education pilot program at the same school, investigating both the effectiveness of the intervention, and factors affecting its implementation. Third, I explore how the recipient characteristic of gender relates to physical activity and mental health in adolescence. Physical activity has the potential to address many considerations outlined and be a leading intervention in positive education. Chapter 6 provides a discussion of findings, their practical implications, strengths and limitations of the research, future directions and a concluding statement. References and appendices denoted throughout this research are then presented. US and UK English are used between chapters depending on the requirements of the journal to which the particular paper has been submitted or accepted, as has the spelling of wellbeing (or 'well-being').

This is applied, pragmatic, solution-focussed research, and it is hoped that it will lead to increased effectiveness and accessibility of positive education initiatives in schools.

## **1 Chapter 1 – Introduction and literature review**

### **1.1 Preamble**

Positive education, an applied positive psychology approach to school-based mental health and wellbeing, has great potential to positively impact overall rates of mental illness. Almost half (45%) of all Australians aged 16 to 85 experience mental ill-health in their lifetime (Australian Bureau of Statistics, 2009) and many lifetime mental disorders begin in childhood or adolescence (Kessler & Bromet, 2013).

Positive Education – originally defined as the focus on development of happiness skills, in addition to academic skills (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009) – is increasingly being considered important, not only for the prevention of mental ill-health, but for academic success and holistic student development (Slemp et al., 2017). The recognition of schools' role in promoting mental health is growing (Allen, Kern, Vella-Brodrick, & Waters, 2018), but there is a large gap between the research that supports positive education, and successful school-based implementation in the real world (Conoley, Conoley, Spaventa-Vancil, & Lee, 2014).

This chapter introduces theoretical underpinnings of positive education, discusses the rationale for positive education in detail, and reviews interventions in positive education. It is followed by an overview of the challenges and considerations for its implementation, and a discussion of physical activity as a promising option for positive education.

### **1.2 Positive psychology**

Positive education is considered an applied stream of positive psychology (Green, Oades, & Robinson, 2011). Positive psychology has been characterised as a science of positive experience, traits, and conditions which enable individuals, groups and communities to reach their full potential (Gable & Haidt, 2005; Seligman & Csikszentmihalyi, 2000). Until relatively recent times, psychology has been dominated by a focus on pathology. Yet, the work of pioneering psychologists of the 1950's such as Abraham Maslow, Carl Rogers and Marie Jahoda, described concepts and criteria for mental health and wellbeing. Ruini and Fava (2015) suggest these aspects of psychological functioning were then somewhat neglected for a time due to the

development of psychotherapeutic strategies that led to symptom reduction. However, with Martin Seligman's presidency of the American Psychological Association in the late 1990's, building positive aspects of mental health *in addition* to the treatment of mental health complaints, has been the focus of new attention (Weiss, Westerhof, & Bohlmeijer, 2016).

Nonetheless, the field has been criticised as an elite endeavour focused on 'Pollyanna' style positivity, on individualism, and for ignoring social and structural factors that influence individual outcomes (Ciarrochi, Atkins, Hayes, Sahdra, & Parker, 2016; Hart & Sasso, 2011). Positive psychology is often, mistakenly, aligned with self-help or secular religion (Lopez & Snyder, 2009). Positive psychology's lack of novelty, particularly in education, has been scrutinised (Donaldson, Dollwet, & Rao, 2015; Kristjánsson, 2012), as has the methodological and empirical rigour used in positive psychology research (Lazarus, 2003). Miller (2008, p. 591) argues that positive psychology equates mental health with a particular personality type; that of a "cheerful, outgoing, goal-driven, status-seeking extravert".

In response, recent research in positive psychology has moved toward a more holistic understanding of resilience, adaptive functioning, and group eudaimonia (Hart & Sasso, 2011). The 'second wave' of positive psychology maintains the primary objective of enhancing wellbeing while acknowledging the need to consider factors that can hinder well-being and positive growth (Ivtzan, Lomas, Hefferon, & Worth, 2015).

### 1.3 Wellbeing

'Wellbeing', from the positive psychology perspective, is an umbrella term used for positive and adaptive aspects of mental health. However, despite the high frequency of the term's use, there is no global definition of the concept (Dodge, Daly, Huyton, & Sanders, 2012). While it is often understood as an absence of psychopathology, this characterisation is inadequate (Dodge et al., 2012; Seligman & Csikszentmihalyi, 2000). The World Health Organization's definition of mental health "is more than the absence of illness" (2004, p. 12) and includes the presence of "a state of well-being in which the individual realizes his or her own abilities, can cope



with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (p. 59). Adding confusion, ‘wellbeing’ is often used synonymously with ‘happiness,’ ‘quality of life,’ or ‘life satisfaction’ (Forgeard, Jayawickreme, Kern, & Seligman, 2011).

For the purposes here, this thesis employs the terms wellbeing and positive mental health interchangeably, and defines them as involving both hedonia (feeling good) and eudaimonia (functioning well; Huppert & So, 2013). On the individual level, these are dimensions of psychological functioning that are positive and adaptive (e.g., optimism, perseverance, social connectedness, resilience<sup>1</sup>), whereas negative mental health refers to symptomatology or illnesses of mental health problems such as those of depression or anxiety. Here I refer to ‘mental health’ inclusive of both positive and negative mental health.

Hedonia focuses on happiness or positive affect while eudaimonia is concerned with living a meaningful, fully-functioning life or reaching one’s human potential (Deci & Ryan, 2008). Both hedonia and eudaimonia are elements of optimal human experience. Research shows there is a substantial overlap between the experience of hedonia and eudaimonia (Deci & Ryan, 2008), and it is thought that when an individual feels good, they tend to function well (Waters, 2015).

### **1.3.1 Theories of wellbeing**

Wellbeing has been conceptualised in different ways by psychological researchers (Hone, Jarden, Schofield, & Duncan, 2014). Below some dominant adult wellbeing theories are summarised, and the adolescent model of wellbeing used in this thesis is outlined.

#### **1.3.1.1 The Mental Health Continuum**

The research of Corey Keyes challenges the assertion that a state of wellbeing exists in the absence of pathology, suggesting negative mental health and positive mental health are on two separate but related continua, resulting in four quadrants – Flourishing (high positive mental health, low negative mental health), Languishing (low positive mental health, low negative mental health), Struggling (high positive

---

<sup>1</sup> defined here as positive adaptation within a context of adversity (see Fletcher & Sarkar, 2013 for discussion).

mental health, high negative mental health) or Floundering (low positive mental health, high negative mental health) (Keyes, 2002, 2005). Keyes' approach to flourishing requires the combined presence of high levels of emotional, psychological and social wellbeing symptoms. It includes dimensions such as positive relationships, purpose in life, self-acceptance, positive affect, social contribution, social integration, social growth, social acceptance, social coherence, environmental mastery, personal growth, autonomy and life satisfaction. The 14-item Mental Health Continuum Short Form (Keyes, 2005) was developed as an assessment of how individuals see themselves functioning both on an individual level and how they see themselves functioning in society.

#### 1.3.1.2 The European Social Survey Wellbeing Module

Huppert and So report on ten features of wellbeing in their conceptual framework for 'life going well' (2013, p. 838). The opposite symptoms of major depressive episode, depressive episode and generalised anxiety disorder, as stated in the American Psychological Association's *Diagnostic and Statistical Manual of Mental Disorders* (1994) and the World Health Organization's *International Classification of Diseases* (1993) were identified. Their resulting conceptualisation of flourishing includes ten positive dimensions; competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self-esteem, and vitality. The European Social Survey (ESS), a biennial cross-national survey of attitudes and behaviour established in 2001 (Fitzgerald, 2018), was used to explore the ten positive dimensions as it contained items corresponding to the ten features and was administered to large randomised samples in 23 countries (a total of 43,000 people aged 15 and greater). Exploratory factor analysis endorsed three factors labelled as positive characteristics, positive functioning and positive emotion/appraisal. For an individual to be considered flourishing, it requires endorsements of positive emotion together with four out of five positive characteristic features, and three out of four positive functioning features (Huppert & So, 2013).

#### 1.3.1.3 The Flourishing Scale

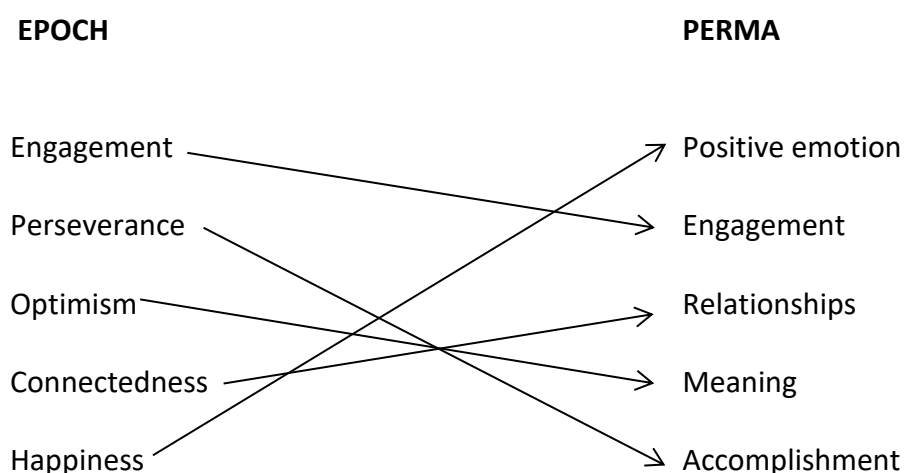
Diener et al. (2010) created the Flourishing Scale as a brief measure of psychological functioning originally in a 12-item format, later refined to eight. They based their work on theories from humanistic psychology, aiming to identify universal human psychological needs (Hone et al., 2014). The model of positive functioning underpinning this measure includes components of positive relationships, engagement, meaning and purpose, self-acceptance, competence, optimism, and social contribution.

#### 1.3.1.4 PERMA

The PERMA model of psychological wellbeing is a widely used and adapted model of wellbeing in Australia, especially in positive education (e.g., Noble & McGrath, 2008). Indeed, the PERMA framework was recommended for adoption (Seligman, 2013) and used for the measurement of wellbeing at scale (Iasiello, Bartholomaeus, Jarden, & Kelly, 2017) in the state in which the current research was carried out. The framework is made of five separated but correlated components; positive emotions, engagement, relationships, meaning and accomplishments (PERMA; Seligman, 2011). Positive emotions refer to hedonic feelings of happiness and positive affect; engagement refers to psychological connection to activities or organisations (e.g. being absorbed and interested); relationships include feeling cared about and supported by others; meaning refers to feeling connected to something greater than oneself; accomplishment involves making progress, feeling capable, and having a sense of achievement (Forgeard et al., 2011). The PERMA Profiler is a 23-item measure of these domains of wellbeing, reported as a 'dashboard' instead of a global score (Butler & Kern, 2016).

#### 1.3.1.5 EPOCH

EPOCH is a model of adolescent wellbeing designed to map onto PERMA (see Figure 1.1), assessing five positive characteristics in youth that the authors believe influence the PERMA domains in adulthood; engagement, perseverance, optimism, connectedness and happiness (Kern, Benson, Steinberg, & Steinberg, 2016).



*Figure 1.1. Conceptualisation of EPOCH mapped to PERMA.*

Engagement refers to the capacity to become absorbed in and focused on what one is doing, as well taking an interest and being actively involved in life activities and tasks. Perseverance is defined as the ability to pursue one's goals to completion, even when obstacles are present. Optimism refers to the presence of hopefulness, confidence about the future, and an adaptive explanatory style. Connectedness is conceptualised as the existence of satisfying relationships with others, and believing that one is cared for, loved, and valued, while also providing friendship to others. Happiness is characterised as consistent positive affect. EPOCH is the model of wellbeing used in the current thesis. The EPOCH measure is discussed further in section 2.2.4.1.1 below.

#### 1.3.1.6 Other Models of Wellbeing

Numerous other models of wellbeing have also been proposed. For instance, Self-Determination Theory (SDT; Ryan & Deci, 2000) was guided by research exploring environmental factors that disable motivation, social functioning, and personal wellbeing. SDT postulates three psychological needs for wellbeing; competence (mastery of the environment and outcome), autonomy (a sense of free will, acting out of our own interests and values), and relatedness (interaction or connection with other people). Rusk and Waters (2015) empirically determined their wellbeing framework, the Five Domains of Positive Functioning. They performed a quantitative

co-term analysis on psychology, education, management, business and psychiatry journal articles, uncovering five broad domains of research interest; attention and awareness, comprehension and coping, emotions, goals and habits, and virtues and relationships. Positives and negatives interact with each other in Positive Psychology 2.0, as proposed by Wong (2011). This dual-system model is based on the co-existence of opposites in human development and flourishing.

The above raises the question of whether wellbeing theory is best articulated using one mental health continuum or two. The answer to this is beyond the scope of this thesis, however Huppert (2014, p. 6) provides a coherent discussion of this issue.

#### **1.4 Positive education**

Positive education views school as a place where students not only develop their academic competencies, but also develop a broad set of social and emotional competencies in order to support their mental health and wellbeing (Seligman et al., 2009). It arose from the 21st century recognition of the need for holistic student development (Eckersley, 2011; Hobbs & Ford, 2012; Waters, 2011), from the need to take a prevention stance to mental illness rather than only a reactive treatment approach (Green et al., 2011; Noble, McGrath, Roffey, & Rowling, 2008), and from the acknowledgement that wellbeing is associated with student learning and academic performance (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Howell, 2009; Suldo, Thalji, & Ferron, 2011). The rationale for positive education is discussed further in section 1.5 below.

It has been argued that schools are an ideal setting to cultivate strengths and competencies (Waters, Sun, Rusk, Cotton, & Arch, 2017). They are uniquely placed as an important developmental context in students' lives, and the experiences of the formative school years can influence the choices students make as adults (Gilman, Huebner, & Furlong, 2014). They are believed to be natural and important settings for mental health initiatives due to their daily and direct contact with young people and their families (Ross, 1980; Ruini & Fava, 2015). It has been suggested that schools teaching positive education would become places where non-cognitive personal assets such as empathy, optimism, self-efficacy and resilience are identified,

cultivated (Vella-Brodrick, 2011), can benefit other life domains, and can be used to buffer against ill-being (Norrish & Vella-Brodrick, 2009; Waters, 2014).

This research focuses on positive education in an adolescent context. Adolescence can be a sensitive time for mental health. Defined as the time between the onset of puberty and the achievement of relative self-sufficiency (Blakemore & Mills, 2014), adolescence is a sensitive developmental stage where significant impacts of positive education can be made (Furlong, Gilman, & Huebner, 2014). Adolescence is a developmental period characterised by vulnerability to psychopathology (Nehmy & Wade, 2014; Steinberg, 2005), where more than 75 per cent of serious mental illness and substance misuse problems first emerge, having a disproportionate impact on the most productive decades of life (Burns et al., 2014; Kessler et al., 2007; Kessler & Bromet, 2013). At the same time, adolescence is also a crucial period for developing skills, habits and adaptive thinking patterns for healthy development and good mental health (Barry, Clarke, Jenkins, & Patel, 2013; Waters, 2018).

Positive education is an approach to school-based mental health and wellbeing inclusive of multiple theories, programs, and frameworks, particularly the scholarship of positive psychology (Slemp et al., 2017). For example, social and emotional learning (SEL), which aims to build social and emotional competencies and assets (Elias et al., 1997), has been considered an 'older sibling' of positive education (Boniwell, Osin, & Martinez, 2016, p. 86). Positive Youth Development (PYD) which aims for human thriving through the 'five Cs' of competence, confidence, connection, character, and caring (Lerner, Almerigi, Theokas, & Lerner, 2005) is another approach to school-based mental health and wellbeing. Indeed there is overlap with health promotion, which enables people to increase control over, and to improve, their health (World Health Organization, 1986). There are also school-based mental health and wellbeing programs that are focused on removing negative factors, such as anti-bullying programs like Friendly Schools (Cross, 2016), and anxiety and depression prevention programs like the MoodGYM program (Australian National University, 2014). The removal of negative factors is a critical pathway to creating and fostering wellbeing, and positive education seeks to add to, rather than replace this approach (Waters, 2011). In sum, positive education is an approach to school-based mental

health and wellbeing, incorporating positive psychology concepts, as well as multiple other theories, programs, and frameworks.

## **1.5 The rationale for positive education**

A growing number of Australian schools are endorsing the mutually reinforcing dual purpose of developing students' academic competencies, as well as their non-cognitive skills and assets for wellbeing and positive functioning (Allen et al., 2018; Slemp et al., 2017; Waters et al., 2017). In the same vein, literature points to three main areas in the rationale for positive education: for the prevention of mental ill-health, for the enhancement of academic capacity, and for the wider benefit of the 'whole' student.

### **1.5.1 Prevention of mental ill-health**

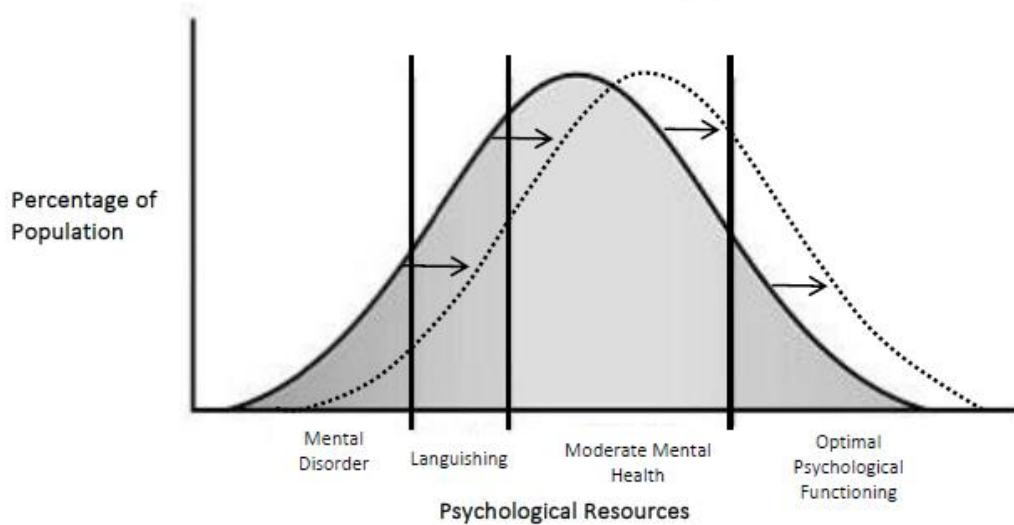
Positive education holds that an increase in positive human traits and states fostered in wellbeing education may act as a protective factor or buffer against mental ill-being (Gillham et al., 2006; Kibe & Boniwell, 2015; Norrish & Vella-Brodrick, 2009; Seligman, 2002; Seligman et al., 2009; Suldo & Huebner, 2004). Mental illness, its prevalence and its cost, considerably impairs society. Almost half (45%) of all Australians aged 16 to 85 experience mental ill-health in their lifetime, with the annual cost of mental illness in Australia being in the order of \$20 billion (Australian Bureau of Statistics, 2009). Mental disorders are significant contributors to the worldwide burden of disease; people who experience mental illness suffer disproportionately higher rates of disability and mortality (World Health Organization, 2013).

Recent years have shown a growing prevalence of psychological ill-being in adolescence (Bor, Dean, Najman, & Hayatbakhsh, 2014). Research has shown mental health problems affect up to one in five young people worldwide (Kieling et al., 2011) with depressive disorders a major contributor (Ferrari et al., 2013). Suicide is now the leading cause of death for Australians aged between 15 and 44 years (Australian Institute of Health and Welfare, 2016). Prevention or early intervention in adolescence may help to prevent adult psychological ill-being, or at least reduce its severity and duration (McGorry, Purcell, Goldstone, & Amminger, 2011). Evidence

indicates the promotion of competence, mastery, and social inclusion involved in many school-based mental health and wellbeing initiatives can underpin both the prevention and treatment of mental, emotional, and behavioural disorders (Durlak et al., 2011).

Positive education takes a *universal* prevention approach to try to move students towards optimal functioning. In universal prevention, *all* members of a cohort receive the intervention regardless of risk level or prevalence of symptoms with the assumption that the intervention is likely to benefit the entire population (Petersen, Bhana, Lund, & Herrman, 2014). It is a widely held view that this approach may reduce the prevalence of mental illness in a population in the same way the epidemiological approach prevents public health problems (Huppert, 2004). Even a modest shift in the mean of wellbeing can potentially work to reduce the mean number of psychological symptoms in the population. This is conceptualised in Figure 1.2. Consequently, the number of individuals in the category of having a mental disorder would be reduced as well as a substantial number crossing the threshold for optimal mental health (Huppert, Baylis, & Keverne, 2005). The universal approach to prevention is thought to be an ideal model of school-based mental health and wellbeing intervention because of its lack of a need to segregate and possibly stigmatise individuals deemed 'at risk' or experiencing mental illness symptomatology in a school context (Kranzler, Hoffman, Parks, & Gillham, 2014; Nehmy & Wade, 2014).





*Figure 1.2.* Effect of universal approach based on the mental health spectrum, based on model of Huppert and So (2009).

While ideal theoretically, it may not work as neatly in practice. Universal intervention may have unintended consequences in complex school environments and in poorly implemented programs, such that this wellbeing curve may become bimodal; the well-functioning get better, while those on the low end get worse. Thus, there is a need to consider not only having prevention programs, but also the ways in which they are implemented.

### 1.5.2 Academic matters

Literature has highlighted the concern that focusing on wellbeing in adolescent education may take focus away from academic pursuits, yet there is growing evidence establishing the association of wellbeing with student learning and academic achievement (e.g., Durlak et al., 2011; Howell, 2009; Suldo et al., 2011). The connection of wellbeing and academic achievement can occur both directly and indirectly through a number of mechanisms.

Fredrickson's (2001) broaden-and-build theory is a useful model for understanding how positive education might impact academic achievement. It holds that experiences of positive emotions broaden a person's in-the-moment thinking and behaviour, which in turn serves to build their enduring physical, intellectual,

social and psychological resources for long term adaptation. Research which supports the model has shown consistent relationships of positive emotions with processes that facilitate learning and performance, such as cognitive flexibility and problem solving (e.g. Isen, 2012), widened attention (e.g. Fredrickson & Branigan, 2005), creative thinking (Seligman et al., 2009) and enhanced working memory (e.g. Yang, Yang, & Isen, 2013).

Fostering student wellbeing works to increase student motivation, engagement, attendance, and positive behaviour at school (Noble et al., 2008). Research has shown students reporting higher wellbeing and better mental health have higher grades, better self-control, less procrastination and less absenteeism (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000; Howell, 2009; Suldo et al., 2011). A meta-analysis of social and emotional learning (SEL) outcomes indicate wellbeing has a positive association with academic performance; compared to controls, SEL participants demonstrated an 11-percentile-point gain in achievement (Durlak et al., 2011). Indeed, SEL has a well-demonstrated association with academic outcomes. In results from three reviews on the impact of SEL involving 317 studies and 324,303 children and adolescents, SEL programming was linked to an 11 to 17 percent improvement in students' academic performance (Payton et al., 2008).

Conversely, mental ill-health is associated with difficulties in concentration and academic activities which require initiative, such as homework or exam study (Fröjd et al., 2008). Students reporting poor mental health are less likely to achieve higher educational degrees (Jonsson et al., 2010) and are more likely to have adult mental health problems (Jonsson et al., 2011).

While outlined theory and evidence suggest that student wellbeing is associated with academic performance and may have a practical education benefit, there are few rigorous experimental studies to demonstrate student wellbeing *causes* academic achievement (Adler, 2017b). Future research in this area can help to inform educational policy.

### **1.5.3    *Developing the whole child***

A growing number of Australian schools acknowledge the need to develop students in a holistic way – psychologically, socially, physically, and academically

(Green, 2014). It has been argued that the skills for wellbeing are needed in order for individuals to have successful and fulfilling lives, and it is for this reason these skills should be taught to young people (Adler, 2017a; Gill, 2009).

Wellbeing and positive constructs, which positive education aims to cultivate in students, have both intrinsic (for wellbeing) and instrumental (for more tangible life outcomes) value. They have been found to be positively associated with: physical health and life expectancy (Danner, Snowdon, & Friesen, 2001; Diener & Chan, 2011; Pressman & Cohen, 2005), immune function and psychological resilience (Tugade, Fredrickson, & Feldman Barrett, 2004), work performance (Keyes, 2007), stronger relationships (Diener & Seligman, 2002; Lyubomirsky, King, & Diener, 2005), pro-social behaviour (Huppert & So, 2013); and negatively associated with work absences (Keyes, 2007), violence and drug consumption (Adler, 2017a), and marriage break-ups (Robertson & Cooper, 2011).

## **1.6 Positive education interventions**

Positive education interventions (PEIs) are broadly defined here as intentional activities or practices which aim to help students build, foster and sustain wellbeing (i.e. feeling good and functioning well). PEIs can be derived from different areas of mental health and wellbeing, such as prevention or SEL. Often they are adaptations of positive psychology interventions (PPIs) that aim to cultivate positive feelings, behaviours, or cognitions such as gratitude, or personal strengths.

PEIs can take different instructional forms; for example, they can be taught explicitly in the classroom, often in pastoral care time or health lessons. A well-known example of an explicit PEI is 'Three Good Things' (Seligman et al., 2009) where students are instructed to say or write down three good things that happen each day for a week. A reflection on why it happened, what it meant or how to make it happen again can also be written. PEIs can also be implicitly included, embedded or "woven into the 'DNA' of the wider school culture" (Waters, 2011, p. 85). Examples of implicit PEIs include teachers using the language of character strengths in discussion of English literature (e.g., Peterson & Seligman, 2004), geography students considering cultural differences in wellbeing criteria for different places (e.g. Seligman et al.,

2009), and sports coaches ending a training session with a ‘what went well’ exercise (e.g., White & Waters, 2015b). They can be stand-alone interventions or in the form of a longer-term, multi-year program developed for a school setting, for example ‘Bounce Back’ cultivates pro-social values, coping skills, relationships, optimism, humour and success (Noble & McGrath, 2003).

In sum, here PEIs refer to activities used within positive education; interventions, practices and programs which aim to help students feel good and/or function well.

### **1.6.1 School-based mental health and wellbeing: Evidence for effectiveness**

Efficacy refers to an intervention’s production of the expected result under ideal circumstances, effectiveness refers to an intervention’s degree of beneficial effect under “real world” clinical settings (Gartlehner, Hansen, Nissman, Lohr, & Carey, 2006). There is emerging evidence for the effectiveness of interventions used in school-based mental health and wellbeing.

A meta-analysis involving 270,034 students from kindergarten through to high school receiving universally delivered social and emotional learning (SEL) programs, found improvements in participants’ social and emotional skills, attitudes and behaviour compared to controls (Durlak et al., 2011). A review of reviews, which included interventions aimed at the prevention of mental health problems in people up to the age of 19 years, showed robust evidence for their effectiveness (Tennant, Goens, Barlow, Day, & Stewart-Brown, 2007). Similarly an overview of systematic reviews found school-based interventions can be effective in reducing depressive symptoms (Das et al., 2016). A Cochrane review found that psychological depression prevention programs were effective in preventing depression in 5-19 year olds in the short term, with some studies reviewed showing a decrease in depressive illness over a year (Merry, McDowell, Hetrick, Bir, & Muller, 2004). A review of a range of school-based programs found evidence for effectiveness of those including the whole-of-school, programs implemented continuously for more than a year, and for programs aimed at mental health promotion programs rather than those only concerned with the reduction or prevention of negative factors (Wells, Barlow, & Stewart-Brown, 2003).

Despite this mounting evidence, there are concerns for the area's lack of rigorous evaluation (Kutash, Duchnowski, & Lynn, 2006), inconsistent implementation quality (Dix, Slee, Lawson, & Keeves, 2012) and the effectiveness and sustainability (Bambara, Nonnemacher, & Kern, 2009) of many mental health programs. Indeed there has been recent recognition (e.g., Ogden & Hagen, 2018) of the importance of examining moderators or conditions that may affect the effectiveness of school based mental health initiatives.

### **1.6.2 Positive education: Evidence for effectiveness**

As discussed above, there is evidence to support the positive impact of many school-based mental health and wellbeing interventions (e.g. SEL). In addition, literature has established the efficacy and effectiveness of positive psychology interventions (PPIs) to build wellbeing and reduce depressive symptoms *in adults* (e.g., Bolier et al., 2013; Casellas-Grau, Font, & Vives, 2014; Meyers, van Woerkom, & Bakker, 2013; Proctor, 2017; Sin & Lyubomirsky, 2009; Weiss et al., 2016). However less is known about the impact and sustained effects of PPIs when used *with children and adolescents* in complex school environments (Green, 2014; Shoshani, Steinmetz, & Kanat-Maymon, 2016), or for positive education itself (Kristjánsson, 2012). The evidence presented here shows promise that an approach to school-based mental health and wellbeing that is grounded in positive psychology (i.e. positive education) could be effective when delivered in schools.

Some tentative evidence does exist. For example, a two-year study of 2,517 Israeli adolescents used a repeated measure experimental intervention design and showed positive effects of a positive psychology-based classroom-level intervention on positive emotions, peer relations, emotional engagement in school, cognitive engagement, and grade point average scores (Shoshani et al., 2016).

Geelong Grammar School, an independent, Anglican, co-educational boarding, and day school (O'Connor & Cameron, 2017), has been a pioneer of positive education within Australia (Seligman et al., 2009) but has only recently reported initial empirical findings (Vella-Brodrick, Rickard, & Chin, 2014). The report measured the mental health and wellbeing of students at the beginning and end of the school year, and results were compared to a control school with

sociodemographically equivalent students. Across all participants, wellbeing decreased and mental ill-being increased during the school year. However, the explicit delivery of PEIs helped to protect students from this declining mental health. Notably, the largest benefit in mental health could be seen in year nine students, who live together in the foothills of the Victorian Alps, undergoing comprehensive academic and outdoor education programs where students are exposed to intellectual, physical and emotional challenges under demanding environmental conditions (the 'Timbertop program'; Geelong Grammar School, 2018). While there are many aspects of the Timbertop program that might provide these benefits, the program includes a high level of physical activity, which this thesis returns to below.

Other studies have similarly found wellbeing and positive education may buffer declines in mental health across the school year. For example, a Southeast London sample was evaluated before and after participating in *Personal Well-Being Lessons* in a non-randomised controlled mixed-methods feasibility study (Boniwell et al., 2016). Compared to the control group, the treatment group's satisfaction with self, satisfaction with friends, and positive affect declined less, and negative affect increased less. A study of Swedish adolescents noted a similar pattern of protection, finding less of a decline in mental health in their school-based wellbeing intervention treatment group compared to a control group (Haraldsson et al., 2008).

Despite this emerging evidence, there is concern that positive education and wellbeing education is unsustainable (Lyubomirsky et al., 2005; Mongrain & Anselmo-Matthews, 2012) decontextualized and coercive (Ciarrochi et al., 2016), insofar that they explain behaviour in terms of positive affect rather than contextual factors, and might be forced on a student despite not being in his or her best interest. In addition, the area has been admonished for not being new or different enough to other school-based mental health programs, such as social and emotional learning (Oades, 2017).

Similar to other school-based mental health and wellbeing initiatives, there is growing recognition in positive education for the need to consider factors that make programs more or less successful, as well as the mechanisms involved (Slemp et al., 2017).

## 1.7 Implementation considerations for positive education

The literature discussed thus far indicates positive education has the potential to be beneficial to students in many areas, and the enthusiasm for it has grown exponentially in the last decade (Noble, 2017). However, it has been reported that a ‘chasm’ exists between the evidence for interventions to improve mental health, and their successful *implementation* in schools, caused in part by a lack of attention to implementation challenges and considerations (Conoley et al., 2014, p. 497).

Implementation refers to how well an intervention is put into practice (Durlak, 1998; Lendrum & Humphrey, 2012). It has been recommended that explicit attention should be given to the quality of implementation of school-based mental health and wellbeing initiatives (Dix et al., 2012), as variability in implementation is related to variability in expected outcomes (Durlak & DuPre, 2008; Lendrum & Humphrey, 2012). Put simply, implementation affects outcomes. The process of implementation requires focused efforts (Bauer, Damschroder, Hagedorn, Smith, & Kilbourne, 2015), but best practice approaches for the effective implementation of positive education is unknown (Conoley et al., 2014).

Although numerous programs and curricula exist that teach wellbeing skills, there are currently few accessible operational frameworks to guide a school’s implementation of positive education effectively. The experiences of Geelong Grammar School (e.g., Norrish, 2015), St. Peter’s College – Adelaide (e.g., White & Murray, 2015) and Wellington College – UK (e.g., Morris, 2013) are well documented. However the implementation contexts at these schools have been “ideal” (Conoley et al., 2014, p. 501), in that all these schools are well-resourced; have benefited from expert consultants; visits from leaders in the positive psychology field; extensive teacher training; and collaboration with universities to inform, assess, and motivate their efforts. Many schools do not have the resources to develop, implement and sustain effective positive education in this way. Mental health initiatives trialled under optimum conditions often struggle when rolled out in the real world of limited funding, time-poor staff and tightly controlled curriculum (Graetz, 2016). Careful consideration is needed before generalising the approach of these elite schools to other schools (O’Connor & Cameron, 2017).

Following, I review implementation literature focused on school-based mental health and wellbeing, positive education and positive psychology, and discuss challenges and considerations in the implementation of positive education. Considerations involve the interaction and overlap of provider (teacher), recipient (student), intervention (positive education), organisational (school) and contextual factors. I note that factors may have more or less importance within a particular context (Ogden & Fixsen, 2014).

### **1.7.1    *The choice of framework and interventions***

Positive education is a growing area and many interventions, programs, practices and curricula have been now been developed e.g., BounceBack! (Noble & McGrath, 2003), the Maytiv Program (Ben-Shachar, Kor, Mikulincer, & Shoshani, 2010), the Penn Resiliency Program (Gillham, Jaycox, Reivich, Seligman, & Silver, 1990), Personal Wellbeing Lessons (Boniwell & Ryan, 2012), the Strath Haven Positive Psychology Curriculum (Seligman et al., 2009). With notable exceptions (e.g., Noble & McGrath, 2016, p. 7), there is little guidance for schools around choosing what is to be involved in positive education for their particular context. The effectiveness of an intervention can depend on its compatibility, or fit, with its recipients, its providers, and the wider context in which it is delivered, and this is particularly relevant for school-based mental health interventions (Lyon, Ludwig, et al., 2014). The same program or intervention that is effective in one school may not be effective or can even be harmful in another (Chaves & Tamés, 2017; Halliday, Kern, Garrett, & Turnbull, 2018).

Intervention fit with *recipients* – how acceptable a program is to those who participate in it – is important insofar that the degree to which participants report enjoying a positive activity predicts how often they complete that activity (Schueller, 2010) and the benefit they derive from it (Lyubomirsky, 2008). Proyer, Wellenzohn, Gander, and Ruch (2015) consider a recipient's preference, their voluntary continuation of practice, and their effort, all as indicators of 'person x intervention fit' (p.108). There is also overlap with intervention characteristics such as dosage, variety and sequence (Lyubomirsky & Layous, 2013). A recipient may enjoy an intervention, but only to a certain point. While some work has been done to fit positive education



with a particular school context and its *providers* (e.g., Waters & White, 2015), fitting an intervention to its *recipients* is an area of positive education that is yet to be clarified.

There is also little guidance directing the delivery strategy of an intervention; its frequency, duration, timing, and mode of delivering. Some programs recommend specific sequencing, resources, or activities, but these might not work well with a school, especially considering other time and resource demands.

### **1.7.2 Fidelity vs. adaptability**

Fidelity refers to the extent to which the program is carried out as intended. Adaptability refers to changes made in the original program during implementation (modification or reinvention to fit provider and recipient preferences, organizational practices, and socio-cultural needs and expectations). Fidelity and adaptability both may affect outcomes, despite seeming incongruous. Durlak and DuPre (2008) discuss this in terms of “finding the right mix” (p. 341), indicating that there is always some degree of adaptation needed.

In the translation of empirically tested interventions to the real world, emphasis has traditionally been on fidelity, but research attention has recently turned to the contextual value of adaptation (e.g., Durlak & DuPre, 2008), and the quality of both (e.g., Lendrum, Humphrey, & Greenberg, 2016). Modifiability or ‘flexibility’ has been identified as a feature of an effective program (e.g., Lyon, Bruns, et al., 2014), as long as established core components remain (Durlak, 2013).

### **1.7.3 Provider knowledge and training**

The teacher, or provider, is central in school-based mental health and wellbeing and can powerfully impact a program’s implementation quality, effectiveness and outcomes (Nordstrum, LeMahieu, & Berrena, 2017). A lack of provider understanding and skills is considered a significant barrier to successful implementation (Lendrum & Humphrey, 2012). Through training, providers should have an understanding of the theory underlying an intervention or program, and how and why it should be implemented. Variability in program effectiveness in wellbeing education has been linked to the training and supervision of providers; the more training and supervision, the better the outcome (Seligman et al., 2009). The

frameworks for positive education that do exist emphasise work with staff as a starting point, the rationale being that if the well-being of the staff is nurtured, they can be authentic role models (Norrish, 2014; Quinlan, 2017). However, the amount of training providers need is unclear.

What staff training looks like varies from school to school, largely depending on resources. For example, at Geelong Grammar School in 2008, notable positive psychology academics converged on the school to teach the skills of positive psychology to over 100 faculty members over a nine-day course, with later refresher workshops provided and scholars remaining in residence to maintain fidelity and motivation (Conoley et al., 2014; Norrish, Williams, O'Connor, & Robinson, 2013; White, 2013). It has been reported that the perception of the need for a large financial investment to train positive education providers is a major obstacle needing to be overcome if positive education is to be successful (White, 2016).

#### **1.7.4 Provider characteristics**

While training can help providers develop intervention skills and knowledge, providers' personal characteristics and attributes can also affect outcomes (Aarons, Green, & Miller, 2012; Durlak & DuPre, 2008). These include: their expectations, motivation, and sense of self-efficacy; their general skill and experience; the perceived need for/relevance of the intervention; the perceived benefit/effectiveness of intervention; the intervention's intuitive appeal to the provider; and the involvement of external paraprofessionals in implementation (Durlak & DuPre, 2008; Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Pearson et al., 2015; Samdal & Rowling, 2011).

These considerations may or may not be addressed in the process of provider training. For example, Quinlan (2017) cites a challenge specific to the implementation of positive education at New Zealand government schools: some teachers were irritated by the label of 'positive education', as it indicated existing teaching practices were 'negative' education. The response to this was to frame positive education as "evidence supporting what good teachers have already done" in future implementation efforts (p.136). The consideration of provider attitudes in this case helped enable the success of future positive education efforts.

### 1.7.5 Recipient characteristics

With notable exceptions (e.g., Pearson et al., 2012; Pearson et al., 2015), less attention has been paid to recipient characteristics in implementation research in the area (Durlak & DuPre, 2008). Yet consideration of these is vital in the adolescent context when students experience rapid change, obstruction toward adults, identity confusion, and susceptibility to the influence of peers (Domitrovich, Durlak, Staley, & Weissberg, 2017; Steinberg, 2016). Recipient characteristics impacting implementation include demographics (age, gender, socio-economic status), their attitudes (perceived need, motivation, buy-in and resistance), their self-efficacy, adherence, believing the intervention can bring about change, knowing the benefits of the intervention, the extent to which recipients' contributions are sought and valued, and support from significant others (Aarons et al., 2012; Damschroder et al., 2009; Domitrovich et al., 2008; Layous, Nelson, & Lyubomirsky, 2013; Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011; Pearson et al., 2015; Samdal & Rowling, 2011; Vella-Brodrick, 2013).

Features and determinants of wellbeing may vary as a function of age group (Gilman et al., 2014), gender (Lehtinen, Sohlman, & Kovess-Masfety, 2005), and/or SES (Bergman & Scott, 2001). Thus, although these are less readily modifiable, they should be considered in the implementation of positive education. The 'buy-in' of a recipient is particularly important in effective implementation of any educational change (Levin, 2000). When a person buys-in to an idea, they agree with it and accept it as worthwhile (French-Bravo & Crow, 2015). Buy-in involves understanding, commitment and action from others in support of a person, idea, proposal, or organisation (Walton & Ury, 2003). Buy-in to positive education and a belief in the efficacy of positive education are important for optimum results (Layous et al., 2013), but may not automatically occur with all students and all staff in all schools. The buy-in of staff has been a focus of schools employing appreciative inquiry in the introduction of positive education (e.g., Waters & White, 2015), however ensuring students believe that positive education is worthwhile has received less research attention.

### **1.7.6 Accessibility**

The lack of resources to implement positive education is a consideration intersecting with other areas discussed above. Positive education has been adopted disproportionately by higher resourced schools (O'Connor & Cameron, 2017); yet it is thought that schools with the greatest need for it are the ones that can least afford it (Proctor, 2014). The perceived prohibitive cost of positive education by potential stakeholders is a major challenge for the area (White, 2016), but it is not without foundation. Staff training, some interventions, the use of experts to craft positive education curricula, and ongoing expert consultation all have potentially large costs which may put high quality positive education out of reach of many less-resourced schools. In addition, early work categorised as 'positive education' resulting in published literature, was completed in higher resourced schools (e.g., Seligman et al., 2009). Moreover, less-resourced schools face unique barriers to the implementation and sustainment of programs such as increased staff turnover and a lack of time for school-based mental health team activities (Eiraldi, Wolk, Locke, & Beidas, 2015).

Inequality between schools is considered a major barrier to the advancement of positive education (White, 2017), yet little is known about how less-resourced schools should support student mental health and wellbeing on limited budgets (Quinlan, 2017).

### **1.7.7 Organisational factors**

Organisational factors here refer to factors within the system of delivery and support of an intervention other than an organisation's available resources (included in section 1.7.6 above). These include alignment of the initiative with organisational goals, organisational readiness for change; collaboration, communication, technical assistance; recipient and provider incentive/reward; and competing interests of stakeholders within the organisation (Damschroder et al., 2009; Domitrovich et al., 2008; Durlak & DuPre, 2008; Fixsen, Naoom, Blase, Friedman, et al., 2005; Forman, Olin, Hoagwood, Crowe, & Saka, 2008). For instance, an inadequate policy framework of an organisation may stand in the way of effective program implementation, just as an organisation's clear priority may enable implementation efforts (Graetz, 2016).

### 1.7.8 Contextual factors

Positive psychology has been criticised for being decontextualised insofar as its practices overlook individual and societal contextual factors, misattributing the cause of behaviour as residing in the individual (Ciarrochi et al., 2016). This fundamental attribution error leads to the conclusion that if someone is not succeeding, it is because they are deficient in some sort of personal quality, rather than causes existing within their environment. The same criticism can be applied to the implementation of positive education in schools, where much of the scientific literature has been produced from experiences of elite private schools with little or no mention of the impact of the specific circumstances of the school. As discussed above, depending on the backgrounds and needs of the students, and the standing of the school itself, an intervention that worked well in one school or classroom might be completely ineffective or even harmful in another.

For example, the use of character strengths in positive education includes the strength of 'spirituality'. Although the distinction between 'religiosity' and 'spirituality' is acknowledged in the theoretical framework of character strengths (Peterson & Seligman, 2004, p. 601), items such as "I have a faith that I practice", "I feel better when I pray", "I believe there is a Higher Power that points me to do the right thing" and "There is a Higher Power looking out for my best interests" may be interpreted as pointing to a non-specific religiosity over spirituality. While character strengths have been used in the context of an Anglican school (White & Waters, 2015a), traditional religious values are core to the school. Australian public education in Australia is "free, secular and compulsory" (Goldburg, 2008, p. 241) and thus Australian public schools may have difficulty negotiating the principles and religious language used (see Singleton, 2011 for further discussion).

Looking beyond school context to the wider sociocultural context in which implementation occurs, gender norms and expectations may impact implementation. Boys and girls are socialised differently (Eliot, 2009) and this may impact their attitudes toward school-based mental health and wellbeing intervention (Friedrich, Mendez, & Mihalas, 2010). Considerations of how adolescents negotiate cultural gender norms in the current sociocultural context may improve implementation outcomes (Landstedt, Asplund, & Gillander Gådin, 2009).

### 1.7.9 *Pragmatic concerns*

Pragmatic concerns such as the timing, timeliness and evaluation of positive education are also considerations in successful implementation. Schools and educators have to deal with many conflicting demands for time and resources, such as fitting a new program into the time table and training providers (Samdal & Rowling, 2013). The timeframe or timeliness of implementing positive education is also an important consideration (Slemp et al., 2017). If it is implemented too quickly, it may indicate a lack of evidence base, or the lack of consideration for other factors such as recipient fit. If it is implemented too slowly, it may result in a loss of enthusiasm or the loss of key personnel to drive the initiative forward. Little guidance exists in terms of effective timing.

Measurement or evaluation of baseline data and changes over time provides valuable information and can help direct the choice of interventions (O'Connor & Cameron, 2017). Having clear outcomes and ways in which to measure them are also important considerations in the successful implementation of positive education (Hobbs & Ford, 2012; Slemp et al., 2017). Yet these demand resources and expertise that many schools cannot provide.

## 1.8 *Physical activity*

If the objective of positive education is to engender wellbeing, promote academic flourishing, and set up adaptive habits for life, all while addressing many of the considerations outlined above, then physical activity may be a valuable response. In fact, it has been posited that physical activity has the potential to be a 'stellar' intervention in positive psychology (Hefferon & Mutrie, 2012, p. 117). Physical activity can play a role in the improvement of mental health (Scully, Kremer, Meade, Graham, & Dudgeon, 1998); it has robust links with mental health, demonstrated over the life course (e.g., Biddle & Asare, 2011; Daley, 2008; Penedo & Dahn, 2005). It has been positively associated with many non-cognitive capacities in adolescents which positive education aims to develop (e.g., wellbeing, mental toughness; Brand et al., 2017; McMahon et al., 2017), and negatively associated with anxiety, stress, and depression (e.g., Bailey, Hetrick, Rosenbaum, Purcell, & Parker, 2017; Ströhle,

2009; Wood, Clow, Hucklebridge, Law, & Smyth, 2018) which positive education aims to alleviate.

The reasons for this robust connection of mental health and physical activity may be multi-dimensional and include numerous factors. For example neurobiological influences (e.g., release of endogenous opioids, angiogenesis and cerebral circulation), psychosocial factors (e.g., social connections), behavioural mechanisms (e.g., sleep volume and quality) or environmental factors (e.g., being active outdoors) all may play a part (Lubans et al., 2016; McAuley et al., 2000; Stimpson, Davison, & Javadi, 2018; Thompson Coon et al., 2011). Physical activity may enhance domains associated with better mental health, such as physical self-perceptions, self-esteem and self-efficacy (Lubans et al., 2016; McAuley & Blissmer, 2000).

Physical activity has been extensively investigated in the field of mental ill-health as a preventative intervention (e.g., Mammen & Faulkner, 2013), and as a treatment (Paluska & Schwenk, 2000). Research shows it may be a less expensive, longer lasting and equally effective treatment for mental ill-health compared to psychotherapy or medication (Dobson et al., 2008; Kern, 2015). Furthermore, physical activity in adolescence may have the added benefit of establishing a trajectory of positive health behaviours over the life-course (Kern, 2015). A discussion of physical activity and factors pertinent to its potential use in positive education follows.

### **1.8.1    *Physical activity vs. sport***

‘Physical activity’, ‘exercise’ and ‘sport’ are terms that describe different concepts, yet they are often used interchangeably. Physical activity is any bodily movement produced by skeletal muscles that requires energy expenditure (World Health Organization, 2011), and includes the full spectrum of activities from typing on a computer, to gentle yin yoga, to rowing a 2000m race at the Olympics. Exercise and sport are subsets of physical activity. Exercise is structured, repetitive, and purposeful, performed specifically to increase fitness (Kern, 2015). Sport is structured, rule governed, and often competitive (Biddle & Ekkekakis, 2005).

Although the broad definition of physical activity is used in the current research, the benefit of *sport* on wellbeing has been discussed in the positive education context. It has been argued that sport has the ability to cross gender, age, or financial boundaries; providing an arena to develop character strengths, a growth mindset, meaning and purpose, resilience and optimism (Scholes, 2017).

### **1.8.2    *How and how much?***

The frequency, magnitude, and type of physical activity required to confer mental health benefits in a PEI is unknown and may vary between individuals. While aerobic training and resistance training appear to be equally effective (Kern, 2015), the dose-response relationship of mental health and physical activity is complex. Mental health benefits from physical activity do not necessarily correspond to guidelines set out by authorities, which were primarily developed with physical health benefits in mind (Pate et al., 1995). Many studies have found mental health benefits regardless of intensity (e.g., Ekkekakis & Petruzzello, 1999), and no additional benefit to mental health by participants meeting guideline recommended levels of physical activity (e.g., McMahon et al., 2017). However, one can have ‘too much of a good thing’. Overtraining has physiological and psychological implications, including irritability, psychological burnout, fatigue, injury, exhaustion, and, ironically, depressive symptoms (Paluska & Schwenk, 2000). The most effective dose, intensity and activity for mental health is likely to be the ones that individuals enjoy and can sustain (Faulkner, Hefferon, & Mutrie, 2015).

### **1.8.3    *The gender gap in physical activity***

Gender may be a crucial factor if physical activity is to be used for the mental health and wellbeing of adolescents. Across time and cultures, males engage in more and higher intensity physical activity than females (e.g., Armstrong & Welsman, 2006; Azevedo et al., 2007; Biddle, Whitehead, O’Donovan, & Nevill, 2005; Brand et al., 2017; Colley et al., 2011; Sallis, Prochaska, & Taylor, 2000; Trost et al., 2002; Voss, Ogunleye, & Sandercock, 2013). Across 17 countries (out of 20) in Asia, Europe, the Middle-East, North America, Oceania, and South America, females reported being less highly-active than males (Bauman et al., 2009). In Australia, males reported higher rates of high level physical activity (19%, compared with 11% of females) and



lower rates of low levels of physical activity (31% compared with 39% of females) (Australian Bureau of Statistics, 2013). This gender gap begins in childhood; in a review of children and adolescents 7-16 years of age, males of all ages were found to participate in more physical activity than females and this gender difference was more apparent when vigorous activity was considered (Armstrong & Welsman, 2006).

Explanations for this gap in physical activity participation range from cultural and social factors, to confusion around measuring physical activity, specifically around which activities are included in its measure. In a review of the literature, Biddle et al. (2005) identify modifiable correlates of adolescent females' physical activity such as body mass index (BMI), parental education, perceived competence, self-efficacy, appearance concerns and other perceived barriers (e.g., lack of time). Negative experiences of school Physical Education (PE) classes may also impact girls' participation; factors cited by Biddle and Mutrie (2007) include boredom, lack of choice, negative evaluation from peers, and feelings of discomfort, embarrassment, stupidity and incompetence. A lack of media coverage of females in sport and instead media representations of the ideal girl as being thin and beautiful, may also be barriers to females' participation in physical activity (Biddle & Mutrie, 2007).

#### **1.8.4    *Physical activity in positive education***

If the gender gap can be overcome, and if females derive as much mental health benefit from physical activity as males, then it could have an important part to play in positive education. It may support student wellbeing, help to alleviate mental ill-health, and may address many of the considerations for effective positive education outlined above. For example, it is a relatively accessible, low cost intervention which can use resources already available in most schools. Most schools already have a physical education program in place; this would indicate physical activity aligns with organisational goals. As an intervention for mental health and wellbeing, physical activity is widely adaptable to fit the needs of providers and recipients, and to fit the school context. Schools may already have a place for physical activity in their timetable; physical education lessons. Schools may already have providers trained in physical activity, with positive attitudes towards it; physical education teachers.

An integration of physical activity with school-based mental health and wellbeing programs might have a higher possibility of benefit than trying to add positive education alone or relying solely on school sport and physical education classes. However, more evidence establishing the positive and negative mental health impact of physical activity for both adolescent boys and girls is needed.

## 1.9 Summary and research objectives

This introductory chapter has outlined positive education; its theoretical underpinnings, rationale, interventions; and considerations for its implementation. It has concluded with a discussion of physical activity in positive education. It has indicated several gaps in the literature about positive education and how to 'do it better' as suggested in the title of this thesis. These include the need for more research into the involvement of students, implementation factors associated with success, and the potential role for the incorporation of physical activity.

The research objectives of the three studies presented here were;

Study one: To explore student involvement using participatory action research in the inauguration of positive education in an Australian public school.

- i. Can student-led PAR help to address implementation considerations of accessibility, intervention fit and student buy-in?
- ii. Is it personally beneficial to students conducting it?

Study two: To explore the implementation of a positive education pilot program (PEPP) in the same school.

- i. Does the PEPP increase wellbeing and decrease ill-being?
- ii. Which implementation factors are likely to have impacted effectiveness of the PEPP?

Study three: To explore the potential value of physical activity in positive education.

- i. Is there a gender gap in mental health and/or physical activity?
- ii. Which domains of mental health is physical activity associated with?
- iii. Does the mental health association of physical activity depend on gender?
- iv. Can physical activity help to explain any gender gap in mental health?

The following chapter is an exegesis which provides a detailed explanation of the research context, rationale and methodology for the three studies, not included in the ensuing papers.



## 2 Chapter 2 – Exegesis

This chapter outlines the overall research project, providing context and rationale for decisions and methodology. Detailed methodologies specific to each study are provided in subsequent chapters.

### 2.1 Context of research

All research was conducted with adolescent students at Blackwood High School (BHS), an Australian public school encompassing grades 8-12, interested in mental health and wellbeing initiatives and which desired to implement positive education in its curricula in the near future. The current research grew from a study that I did in my honours year of psychology (2014). In the study, I measured baseline mental health, and examined the association of markers of mental health and health behaviours; smoking, drinking, sleep and physical activity (Halliday, 2014). Among the findings were: a gender gap in mental health and physical activity, with girls reporting poorer mental health and less physical activity than boys; a strong association between mental health and physical activity; and a moderating effect of social physical activity, where activity undertaken in a social situation was associated with better mental health when compared with physical activity conducted alone.

At the time of this study, there was a dearth of publicly available evaluations and operational frameworks to guide a school's development, implementation and sustainability of positive education. The experience of schools which had adopted positive education, and the extant literature about implementation, gave rise to certain considerations for schools implementing positive education (discussed in section 1.7 above). My subsequent PhD research aimed to examine and address some of these considerations, and provide answers to the question of "how can we do positive education better?"

#### 2.1.1 Study setting

Research was conducted at BHS between 2014 and 2017. The school is located in the suburban foothills of Adelaide, Australia, and has a similar Index of Community Socio-Educational Advantage (ICSEA) to the Australian average. ICSEA provides an indication of the level of educational advantage of the school's student population relative to those of other schools, based upon geographical location, the

proportion of indigenous students, and the occupation and level of education of students' parents. ICSEA is set at an average of 1000 (Australian Curriculum Assessment and Reporting Authority, 2012). In 2016, scores ranged from 125 for a school in the Northern Territory's remote Arnhem Land, to 1308 for an independent inner-city Sydney school. ICSEA values for BHS during the research were 1067 (2014), 1060 (2015), 1068 (2016) and 1058 (2017). Total enrolments ranged between 853 and 964 during the research period, and the number of staff ranged between 61 and 70. The number of students from a language background other than English ranged between 8%-12% (Australian Curriculum Assessment and Reporting Authority, 2018).

At the time, the principal of the school Marion Coady, and deputy principal, David Garrett, had identified key personnel to advance the project, and had begun introducing positive education concepts to staff. Some teaching staff had already undergone training in positive education, and many did so during the research period (2014-2017). Training included courses conducted by Geelong Grammar School (Institute of Positive Education, 2018) and the South Australian Health and Medical Research Institute (The Wellbeing and Resilience Centre, 2018). Initial correspondence with the school is included in Appendix 1.

### **2.1.2 Ethics and consent**

Procedures were approved by the University of Adelaide's Human Research and Ethics Sub-committee (approval numbers 15/18, 16/02, 17/04) and the South Australian Department of Education and Child Development (DECD; approval numbers CS/15/00004-1.6, CS/16/000067-1.1, CS/17/000750-1.22). Ethics approvals for all studies are included in Appendix 2. Study three required a waiver of consent; details are also in Appendix 2.

Third party consent was sought for all participants, and students themselves also gave consent in the various research activities. Third party consent forms and accompanying information sheets (different versions for students and for their guardians) are included in Appendix 3 and Appendix 4 respectively.

Data were collected anonymously for all years except 2017. I had no access to identifiable information, thus that data collected from 2014 through 2017 can be considered anonymous.

### 2.1.3 Outline of research

Table 2.1 outlines the data collection for the current research. These studies will now be described in turn (see subsequent chapters for additional details).

Table 2.1

*Data Collection Outline.*

	Data collection	Study in which data were used
<b>2014</b>	Whole School Measure	Honours project Study three
<b>2015</b>	Whole School Measure	Study three
	PAR evaluation (pre/post)	Study one
<b>2016</b>	Whole School Measure	Study two (T1) Study three
	PEPP measure	Study two (T2) and (T3)
<b>2017</b>	Whole School Measure	Study three

Note. For details on whole school measure see section 2.3.5.1. For details on PAR evaluation see section 2.2.4. For details on PEPP measure see 2.3.5.2.

## 2.2 Study one

### 2.2.1 Outline

The first study aimed to address positive education considerations of accessibility, intervention fit and student buy-in through student-led participatory action research (PAR; see section 2.2.3 below). PAR outcomes would eventually inform a positive education pilot at the school (study two). A secondary objective was to examine personal benefit that might arise for students who conducted the PAR. These two objectives were considered in terms of an examination of ‘PAR outcomes’ (i.e. did it help to address accessibility, intervention fit, and student buy-in?) using narrative description, and an evaluation of the ‘PAR process’ (i.e. did it benefit the students who conducted it?) using mixed methods.

Ten students (‘PAR students’) were purposively chosen to participate in the process. This involved six PAR workshops conducted fortnightly (not including holidays) during terms 3 and 4 of 2015. The workshops included learning on wellbeing, positive education and research methods; the compilation of data; and the

formation of communication strategy (see Appendix 5 for more detail on workshop content). Action research of the school community was conducted by PAR students in the time in-between workshops and involved interviews, focus groups and other activities such as trialling potential positive education interventions. A pen and pencil questionnaire was administered to PAR students at the beginning of workshop one, and at the end of the final workshop. A research assistant also conducted an evaluative interview with two of the PAR students after the final workshop (see section 2.2.4).

### 2.2.2 *Rationale*

Student-led PAR was chosen to help address the implementation considerations of accessibility, intervention fit and student buy-in. First, student-led PAR is accessible; it uses the school's own resources. Second, it was thought PAR may aid intervention fit by providing valuable insight about adolescent perspectives and experiences. According to Boyle (2012), students are experts on their own lived experience, have valid scope to inform us what they will respond to, and are best placed to understand what does and does not work in practice. It is believed that interventions that are informed by recipients' perspectives will be more compatible, more relevant, more effective, and more sustainable (Lansdown, Jimerson, & Shahroozi, 2014). Third, student-led PAR may also foster buy-in. Literature suggests stakeholder research fosters buy-in through the empowerment experienced by practitioners (e.g., Samdal & Rowling, 2015). According to Ozer and Wright (2012) students will experience little if any meaningful input into school practices or policies. It is thought that PAR enables its practitioners to understand and be empowered to improve the situations in which they find themselves (Baum, MacDougall, & Smith, 2006). Waters and White (2015) identified staff involvement through appreciative inquiry, another form of stakeholder action research, as a way to increase *staff buy-in* into the school's positive education initiative. Student-led PAR expanded on this idea to potentially aid *student buy-in*.

In addition, the Department of Education and Child Development (2015) advocates for the involvement of students in affairs that concern them:



Young people need opportunities to engage in meaningful activities, have a voice in decisions, take responsibility for their actions, and actively participate in the life of the community. When young people are not engaged in meaningful activities or when their voice is not honoured, they are at risk of not feeling valued and of becoming disconnected from others. This is likely to lead to problems for both the young person and the community. All social systems and agencies that affect children and young people should be based on the principles of the Convention on the Rights of the Child, to which Australia is a signatory. Article 12 reflects the importance of respect for the views of the child and that young people have the right to say what they think should happen and have their opinions taken into account (p. 55)

Waters and White (2015) used appreciative inquiry in their study, whereas PAR was chosen for this research, for several reasons. Like PAR, appreciative inquiry is a systematic, collaborative form of stakeholder action research, but unlike PAR, it follows a strengths-based model of change where it seeks to find the strengths in a system and to use those strengths as a platform to create change (Waters & White, 2015). A concern with appreciative inquiry is that its positive focus may serve to hide or invalidate negative experiences of participants and can lead to undeveloped or one-sided views of the issues at hand (Bushe, 2011). Thus, PAR was thought to allow a more balanced view of student wellbeing to be presented.

In addition to improved intervention fit and recipient buy-in, there can also be potential personal benefits for the students conducting the action research. There is growing literature that goes beyond the description projects using PAR methodology, and extends to the examination of their impact on young people (Ozer & Wright, 2012), including an enhanced sense of agency, competence, and belonging (Berg, Coman, & Schensul, 2009; Mitra, 2004). Self-determination theory (Ryan & Deci, 2000), which posits wellbeing consists of the met needs of competence, autonomy, and relatedness, provides insights into how benefits might arise. By allowing students to contribute to and endorse the decisions being made regarding their own wellbeing, their sense of autonomy may increase. The practice of applying wellbeing education in their school, and knowing they can make a difference to their fellow

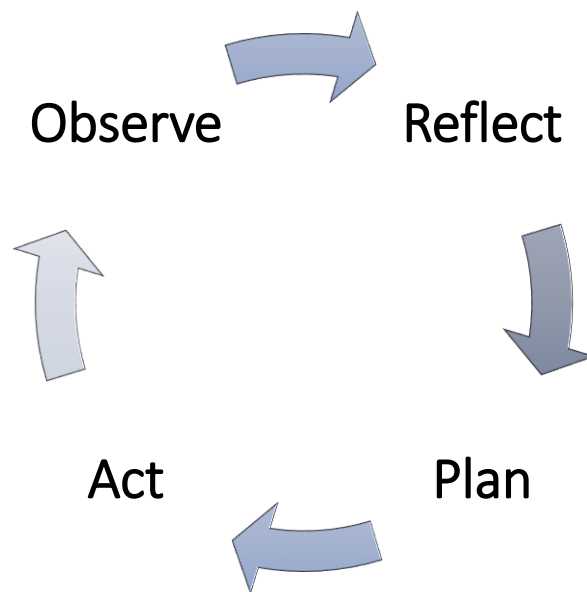
students may lead to competence. As students collectively work towards their future wellbeing education, and have more professional and collegial interaction with staff (Ozer & Wright, 2012), their need for relatedness may be satisfied.

In this way the developmental benefits of PAR are in accord with the objectives of positive education: to build and foster wellbeing. Empowerment is consistent with the emphasis on strengths that is a hallmark of positive education. And, in addition to competence, autonomy and relatedness, efforts to involve the student voice has been linked to other concepts central to human wellbeing, for example engagement (Jacquez, Vaughn, & Wagner, 2013), meaning and purpose (Noble & McGrath, 2016).

### **2.2.3 Participatory Action Research (PAR)**

Participatory Action Research (PAR) is a systematic approach to collective investigation of an issue by the people affected by the issue (Baum et al., 2006). It can be conceptualised as a process of research, education, and action (Brydon-Miller, 1997). PAR falls within a ‘stakeholder research’ rubric, which includes action research, participatory research, community-based participatory research, action science, collaborative inquiry, action inquiry, and appreciative inquiry. All of these approaches share the principle of including the stakeholder (i.e., a person or group that has an investment, share, or interest) in the inquiry process (Cargo & Mercer, 2008; Holkup, Tripp-Reimer, Salois, & Weinert, 2004).

As illustrated in Figure 2.1, PAR is an iterative process, which involves a cycle of observation, reflection, planning, and action (Crane & O’Regan, 2010). A problem or issue is observed and framed, a shared vision is determined, a strategy is developed, data are collected and made sense of, new understandings are shared and action is taken in the form of presentation of findings and changes in practice (Hazzard & Power, 2011). Throughout the process, consultation with stakeholders and sharing of information occurs.



*Figure 2.1. The participatory action research cycle of inquiry.*

Students can be active and engaged or passive and indifferent as a function of their context (Ryan & Deci, 2000). PAR borrows from Relational Pedagogy (Magolda, 1996) in its connection to student engagement, motivation, buy-in and culture change. Relational Pedagogy suggests practices which involve students as educational partners and valued participants can be used to facilitate change in the classroom (Boyd, MacNeill, & Sullivan, 2006). Reflective behaviours, class meetings and student-centred learning are all put forward as practices that empower students, providing them with a platform to have their voice heard, encouraging them to develop communication skills and critical thinking.

#### 2.2.3.1 Strengths of PAR

A key strength of using PAR in this context is that it enables and empowers students to gain control over determinants of their wellbeing (Cargo & Mercer, 2008). By listening to students' voices; action taken as a result of PAR may be more effective through having appropriate interventions (Proctor et al., 2011) and increasing student buy-in (Levin, 2000); and students experience greater investment regarding the future of an implementation (Lind, 2007). Decisions on programs designed for young people that are fully informed by young people's experiences and perspectives will be more relevant and therefore more effective than those that lack

that perspective (Lansdown et al., 2014). Adults do not always have sufficient insight into the lives of young people, and thus decisions that are made often ignore the reality that young people face (Checkoway, 2011).

#### 2.2.3.2 Challenges of PAR

PAR has a number of strengths, but it can also present challenges. For example, it requires sensitivity from the researcher to the participants' agendas, and it often includes community members in the research team, who may struggle to maintain their commitment to the research project over time (Gillis & Jackson, 2002). In the current research, the former was mitigated by the lead researcher being familiar with the community and from the same cultural background (MacDonald, 2012), the latter was mitigated by the succinct timeframe in which the study was run. An additional challenge of PAR is that the voices that are being heard are too few and may not be representative of the community. In the current research, this challenge was presented to the PAR students, who were also explicitly told to include all ages and 'friendship groups' in their research; "make sure you don't *just* talk to your mates".

Pre-existing power inequities, especially when conducting PAR with youth, may remain. In the current research, we viewed this as a careful balance; adults allowed enough participation to foster young people's sense of ownership and autonomy while providing the scaffolding needed to help young people develop research and communication skills, manage deadlines and resolve conflicts (Livingstone, Celemencki, & Calixte, 2014).

#### 2.2.4 Evaluation of PAR

I examined the impact of PAR *outcomes* (i.e., did it aid intervention fit and foster student buy-in?) through narrative description, and the impact of the PAR *process* (i.e., what personal benefit was there to students conducting PAR?) using mixed methods.

Mixed methods research relies on qualitative and quantitative viewpoints, data collection, analysis, and inference techniques. It is thought to combine the strengths of quantitative and qualitative methods, and to compensate for their respective limitations (Lund, 2012; Pluye & Hong, 2014). In mixed methods research,

the importance of quantitative and qualitative techniques are recognised, but it is argued that it also offers a powerful third choice that often will provide the most informative, complete, balanced, and useful research results (Johnson, Onwuegbuzie, & Turner, 2007). Quantitative data were collected before the action research period and both quantitative and qualitative data were collected after it. For standardised quantitative measures (see section 2.2.4.1 below), a matched comparison group was recruited to help control for any school-wide effect that may help explain findings within the PAR group.

#### 2.2.4.1 The PAR process: quantitative evaluation

Standardised measures mapped to competence, autonomy and relatedness were used; wellbeing (EPOCH; Kern et al., 2016), self-efficacy (GSE; Schwarzer & Jerusalem, 1995), student and teacher rated social and emotional assets (SEARS-SF; Merrell, 2011), and items of my own design. These were administered in paper and pencil format before and after the PAR process. To reduce repetition, more detailed information on the psychometric properties of each instrument is presented in Chapter three.

##### 2.2.4.1.1 Wellbeing (EPOCH)

The 20-item measure of adolescent wellbeing (EPOCH; Kern et al., 2016) provided indicators of positive mental health across five domains: Engagement, Perseverance, Optimism, Connectedness and Happiness. This instrument was chosen as it maps to PERMA (Seligman, 2011), which was the chosen wellbeing framework of BHS.

##### 2.2.4.1.2 General Self-Efficacy Scale (GSE)

The 10-item General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) was used to assess perceived self-efficacy of adults and adolescents reflecting an optimistic self-belief of the ability to perform new or difficult tasks, or to cope with adversity.

##### 2.2.4.1.3 Social Emotional Assets and Resilience Scales (SEARS)

The 12-item short form of the adolescent (SEARS-A-SF) and teacher-rated (SEARS-T-SF) social and emotional assets and resilience measure were used to

investigate students' social-emotional competencies (Merrell, 2011). Each student's pastoral care teacher completed the SEARS-T-SF within several days of the student's measure before and after the PAR process.

#### *2.2.4.1.4 Other quantitative measures*

I also included nine items of my own design for the PAR group, which were answered after the PAR process to further investigate PAR students' competence and autonomy.

#### *2.2.4.2 Statistical analyses*

With a small sample, Reliable Change Indices (RCI) were used in the analysis of change in standardised measures. It is a measure of the magnitude of change using the reliability of a scale that allows a determination of whether a change observed for an individual case is greater than what might be expected due to measurement error (Evans, Margison, & Barkham, 1998). It is used to help determine if response change observed is a genuine change, or simply random error. Using the formula recommended by Evans et al. (1998, p. 70), the reliable change index was calculated by the formula:  $(1.96) \cdot SD_1 \cdot \sqrt{2 \cdot (1 - r)}$ , where 1.96 refers to the standard Z value for a 95% confidence interval,  $SD_1$  is the standard deviation of the measure at T1 and  $r$  = the Cronbach's alpha or reliability coefficient for the scale at T1. Changes in scores considered reliable from T1 to T2 exceed this value. Detail of calculations for study one is included in Appendix 6.

#### *2.2.4.3 The PAR process: qualitative evaluation*

Qualitative data were collected through open-ended items in the post-PAR questionnaire and in interviews conducted by a research assistant with two of the PAR students. Some items in the qualitative process evaluation also related to the outcome evaluation (e.g., 'Do you think that other students knowing about the student involvement will help them 'buy-in' to Positive Education / believe in Positive Education / take positive education more seriously?'), and were included in the narrative description of PAR outcomes.

These data were stored and analysed using NVIVO 11. A thematic approach was taken (Braun & Clarke, 2006) and key themes were determined. A subset of data

was independently reviewed by a separate member of the research team and consensus regarding interpretation was reached. Due to the small sample size, the brevity of the participants' written responses and only two students being interviewed due to time constraints, data saturation was unlikely to have been reached.

## 2.3 Study two

### 2.3.1 Outline

The second study aimed to evaluate a positive education pilot program (PEPP) informed by the student-led action research (study one), and to examine factors likely to have impacted effectiveness of it, in order to inform future positive education efforts. The PEPP (detailed in section 2.3.3) was implemented in a wait-list design with year nines at BHS. Year nine was divided into two groups. Online measures of mental health (detailed in section 2.3.5) for the whole of year nine were taken at baseline (T1), after the first group had completed the PEPP (T2) and after the second group had completed the PEPP (T3). Mixed methods were used at T2 and T3 in order to examine factors in the PEPP's implementation that are likely have impacted its outcome (detailed in section 2.3.6).

### 2.3.2 Rationale

Evaluations of *interventions* tells us what works or what does not under ideal conditions, but real-world contexts lack experimental control. Additional evaluation of their *implementation* can help to explain: why an intervention worked (or not), for who (or who not), under what conditions does it work, and what is needed to scale-up interventions in real world contexts. Implementation here refers to how well an intervention is put into practice (Durlak, 1998; Lendrum & Humphrey, 2012). It is a widely held view that how a program is implemented affects its outcomes. Durlak and DuPre (2008) reviewed more than 500 studies and found mean effect sizes were two to three times higher in programs where implementation was carefully considered.

There are promising findings suggesting that an approach to school-based mental health and wellbeing that is grounded in positive psychology could be effective, promoting desirable outcomes for children and adolescents. However, this potential value of positive education needs to be adequately tested, with careful attention paid to implementation factors (Durlak & DuPre, 2008). Evaluations of implementation helps us to learn from non-significant hypothesised results, and to be responsive to the practical challenges of complex educational contexts (Greene, 2015). In short, it can help inform how to do positive education better.

### **2.3.3    *The Positive Education Pilot Program***

Study two used a Positive Education Pilot Program (PEPP) as a small-scale intervention, primarily to evaluate implementation factors in positive education. It was not meant to be the ideal, comprehensive, whole-school, long-term program the school ultimately desired to run, but rather a small-scale test case which incorporated reported practices of positive education, adapted evidence-based positive psychology interventions, and utilised extant mental health interventions. The nine-session PEPP was run once a week with one half of year nine in term two, and the other half of year nine in term three of the same year.

The content of the PEPP was guided by data collected in 2014 and 2015 at the school which pointed to years eight and nine as having alarming rates of depression symptomatology. Year nine was chosen for the PEPP, as both literature and anecdotal evidence from BHS teachers and counsellors, point to year nine being a developmental flashpoint (e.g. Cole, Mahar, & Vindurampulle, 2006a, 2006b). To address psychological distress, MoodGYM (Australian National University, 2014) was chosen. MoodGYM is a free, well-established online program using age appropriate content. Studies support its value in decreasing levels of stress, anxiety and depression (Christensen et al., 2011). It requires no specialised training for participants or supervisors (Orman et al., 2014). The PAR students (study 1) had found that students were open to the use of technology in wellbeing learning. In addition, MoodGYM could be delivered in five of the nine allocated sessions; other programs available to Australian Schools (e.g., SenseAbility, MindMatters) were too large in scope for a short pilot program.



On the positive (proactive) side, five interventions adapted from positive psychology were chosen; 'Three Good Things' (Seligman et al., 2009), 'Gratitude Letter' (Seligman, Steen, Park, & Peterson, 2005), 'Meaning Through Photography' (Steger et al., 2013), 'Counting Kindness' (Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006), and 'Best Possible Selves' (Layous et al., 2013). These five interventions have been found to increase positive affect, gratitude, kindness, pro-social behaviours, flow and positive relationships, and provide a non-verbal medium to understand meaning (Layous et al., 2013; Otake et al., 2006; Seligman et al., 2009; Seligman et al., 2005; Steger et al., 2013). Teachers were given a PowerPoint Presentation ahead of time to show to students in each of the nine sessions. This allowed them time to add personal touches where prompted. As an example, the presentation and supporting materials for session one can be seen in Appendix 7.

The waitlist design enabled one half of year nine to act as a control group in the first wave, and to allow the other half of year nine to be measured beyond the immediate conclusion of the PEPP. A school term (10 weeks) was considered an acceptable timeframe to keep the 2<sup>nd</sup> cohort waiting for the intervention. Terms two and three were chosen as there was a likelihood of final exams causing academic stress for students in term four.

#### **2.3.4 Teacher training**

To ensure care group teachers were provided with a base level of training in positive education, a brief three-session course with supporting materials was devised. The 'before' measure of provider factors, such as teaching efficacy, was taken at the final session. Course materials are included in Appendix 8.

#### **2.3.5 Online data collection**

Data in study two and study three (discussed in section 2.4 below) were collected online using SurveyMonkey software (SurveyMonkey, 2018) through the school's account. Online surveys have a number of advantages over traditional paper-and-pencil surveys, including increased accuracy through automated data entry (Couper, Traugott, & Lamias, 2001), cost effectiveness, reduced researcher time and effort (Wright, 2005), and a higher degree of self-disclosure particularly for sensitive topics (Booth-Kewley, Larson, & Miyoshi, 2007). BHS students had access to internet

enabled computers as part of their day-to-day activities, and the school often used SurveyMonkey as part of their day-to-day evaluation activity. However, concerns of data collection through online survey instruments is non-response error (i.e. the required information is not obtained) and intentional false responses (e.g. invariant responses; the same option selected repeatedly). To reduce non-responses, the school required and enforced all students with consent to complete the survey, and allowed a set time in lessons in order for it to be completed. Intentional false responses are considered in section 2.3.5.3 below.

#### 2.3.5.1 Whole school measure

Study two (at T1 only) and study three used data resulting from a whole school questionnaire. This was an online questionnaire and began with demographic questions: age, gender, year level, care-group (i.e., pastoral care group or homeroom) and an item on language background (i.e., “do you speak a language other than English at home?”). The questionnaire included items on positive mental health, negative mental health, resilience, sleep and physical activity. A pragmatic approach was taken with the choice of standardised measures; psychometric validity had to be balanced with the least number of items possible, to reduce participant burden. BHS was extensively consulted on the measures that should be included. The 2017 version of the full questionnaire used can be seen in Appendix 9. To reduce repetition, more detailed information on the psychometric properties of each instrument is presented in Chapters 4 and 5.

##### 2.3.5.1.1 EPOCH

See section 2.2.4.1.1 for information on EPOCH.

##### 2.3.5.1.2 DASS-21

The Depression Anxiety Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995) was used to provide an indication of respondents’ negative emotional states. The DASS-21 is a 21 item self-report measure comprised of scales for Depression, Anxiety, and Stress. The Kessler Psychological Distress Scale (K-10; Kessler et al., 2002) was also initially presented to the school as a non-specific measure of psychological ill-health with fewer items (i.e., 10 instead of 21), but the school was

interested in the delineation of depression, anxiety and stress, thus the DASS-21 was used.

#### 2.3.5.1.3 *CD-RISC*

The 10-item Connor-Davidson Resilience Scale (CD-RISC 10; Davidson & Connor, 2015) was used to provide an indication of one's adaptability and ability to cope with stress from the 2016 data collection onwards.

#### 2.3.5.1.4 *PAQ-A*

The Physical Activity Questionnaire for Adolescents (PAQ-A; Kowalski, Crocker, & Donen, 2004) was employed as a standardised measure of levels of physical activity. The measure does not discriminate between specific activity intensities, but instead assesses a general level of physical activity. Some items were adjusted for cultural relevancy (e.g., references to cross-country skiing and ice hockey/ringette were omitted and replaced with football and netball). Although these data were collected as a part of T1 in study two, they were analysed as part of study three (see Table 2.1, sections 2.4 and 5).

#### 2.3.5.2 *PEPP measure*

Study two collected data at T1, T2 and T3. The baseline (T1) collection was the full 'whole school' measure (see section 2.3.5.1), which included items on positive mental health, negative mental health, and physical activity. The two subsequent data collections (T2, T3) were conducted online for only year nines and only included demographic information, positive mental health items, negative mental health items, and included program evaluation questions for the group that had immediately completed the PEPP.

#### 2.3.5.3 *Data screening*

There are a number of approaches to data screening for increasing the rigour of analysis and enhancing the trustworthiness of study results (DeSimone, Harms, & DeSimone, 2015; Tabachnick & Fidell, 2013). A conservative approach was taken here, best described by the 'archival screening method' which does not require the modification of a survey, but focuses on patterns of responses that may indicate insufficient participant effort (DeSimone et al., 2015, p. 172). One such pattern is

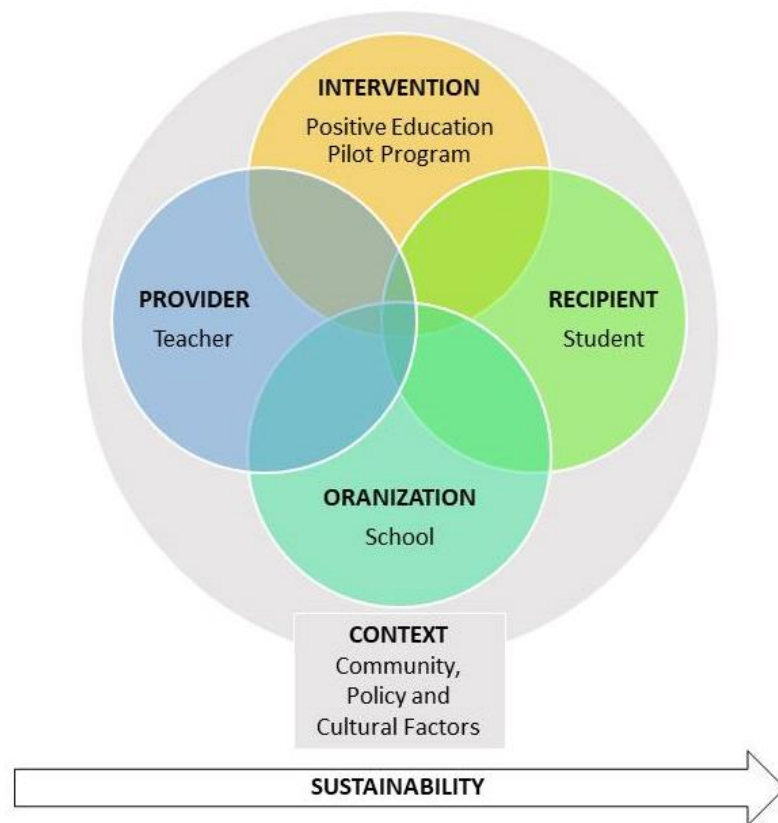
invariant responding (i.e., the same option being selected repeatedly). Intentional false responses such as invariant responses have been shown to have distorting effects on statistical analyses (Fan et al., 2006). Yet, this needed to be balanced with the possibility that such a pattern might be a participant's legitimate response (Meyers, Gamst, & Guarino, 2017). None of the measures used utilised reverse answer scales, thus it is possible that a participant could have responded validly using the same answer option throughout the survey. Although high scores on EPOCH indicated high wellbeing, and high scores DASS-21 indicated high ill-being, on visual inspection there were only between two and five cases in each year of data collection that had invariant responses. These cases remained in analyses.

### 2.3.6 Implementation evaluation

Discussed above is the evaluation of the *intervention* (the PEPP). Following is a discussion of the evaluation of its *implementation*. The study of implementation aims to find which factors prevent or enhance implementation in real-life settings (Lendrum & Humphrey, 2012). Measures of implementation have infrequently been reported, giving little guidance to educational researchers (Lendrum & Humphrey, 2012; O'Donnell, 2008). Some implementation frameworks lay out chronological steps, others look at the eco-system of implementation considerations. Due to constraints of both the school calendar and the timing of the PhD, the latter approach was taken and a heuristic framework was developed to consider contextual factors that may affect the implementation quality of school-based intervention.

A search of the literature was conducted using the phrases "implementation", "positive education", "prevention", "social and emotional learning", "school-based" and "mental health" in Google Scholar and the Scopus database. References were then imported into EndNote and then into N-Vivo, a data analysis program able to hold both qualitative and quantitative data. I reviewed abstracts to determine appropriate inclusions and further references were found through the citations of the included literature. The word cloud tool in N-Vivo was used to identify initial key terms across the literature. This gave a graphical view of the frequency and relevancy of implementation factors mentioned in the included literature. As the review progressed, categories of factors emerged and a model showing their overlap was

produced (Figure 2.2). The model is considered heuristic insofar that it is an approach employing a practical method, not guaranteed to be optimal, but sufficient for reaching an immediate objective (Ippoliti, 2015).



*Figure 2.2.* Organising framework illustrating categories of factors impacting positive education implementation.

The resultant model drew from Bronfenbrenner's (1977) model of development, a model utilised and adapted throughout study one. PAR students had used Bronfenbrenner's (1977) Ecological Systems Theory of Development to explore how issues are affected by multiple layered domains. Bronfenbrenner's work has been influential in mental health and wellbeing initiatives in schools, promoting the holistic approach (Shute & Slee, 2016). Program outcomes in study two were thought to be affected by the stratified factors in the heuristic model, and their overlap; just as Bronfenbrenner's model proposed a child's development is influenced by the interaction of their environment and themselves.

The model was used to organise implementation factors thought to be influential in this context, and to develop ways of evaluating them in the research. Table 2.2, Table 2.3, Table 2.4, Table 2.5, and Table 2.6 shows how intervention factors, recipient characteristics, provider factors, organizational factors, and contextual factors respectively were addressed in the process of evaluation. Existing measures, such as the evidence-based practice attitude scale (EBPAS; Aarons, 2004) and teacher self-efficacy scale (TSES; Schwarzer, Schmitz, & Daytner, 1999) were used as guides in the wording of implementation exploration items. There are some implementation factors that were considered but are not included in this table, such as the involvement of external paraprofessionals in implementation (provider factor), and the organisation's requirement to implement the intervention (organisational factor). Data were collected after the PEPP (except where otherwise stated) using mixed methods, from; evaluative items in students' online questionnaire, a student focus group, a survey of teachers (both pre and post PEPP), a 'discussion' with all available teachers, an online parental survey, analysis of policy documents, and an interview with the school's deputy principal representing views of the school.

Table 2.2

*Exploration of Implementation: Intervention factors.*

<b>Factor</b>	<b>Investigation setting</b>	<b>Item</b>
Compatibility with recipients (appropriateness, fit, congruence, match)	Teacher discussion	How appropriate was the positive education content? Specifically for the year nine age group?
	Student evaluative questions	I enjoyed doing this trial of positive education
Fit with the organisation's mission, priorities, policies and values	Deputy principal interview	How does positive education, and more specifically the content that was contained in the trial, fit with the values of Blackwood High School?
Adaptability vs. fidelity, including standardised teaching materials	Deputy principal interview	How well did you think the positive psychology interventions were adapted to the school setting at Blackwood High?
	Teacher discussion	How closely were you able to deliver the PET as intended? Were there any changes/adaptations you made 'on the run'? Did all classes reach the same point in the content by the last PET session? Were there any privacy issues with doing activities involving the whole class? If so, how were they handled?
Dosage effects: Time & Timing	Teacher discussion	Was there anything specific that you think would improve the activities used in the PET? Such as the timing of the activities – more or less frequent etc.
	Student focus group	Was Extended Care Group the best time in which to do Positive Education? Would you have liked to spend more time on each exercise? Or would you have liked to do positive education more frequently than once a week?
Clear outcome measures	Online data collection	Positive and negative mental health (EPOCH, CD-RISC, DASS-21 – see 2.3.3)

*Note.* Except where stated, all student evaluative questions and teacher pre-PEPP items were answered on a 5-point agree-disagree Likert scale

Table 2.3

*Exploration of Implementation: Recipient characteristics.*

<b>Factor</b>	<b>Investigation setting</b>	<b>Item</b>
Feelings values attitudes of recipients about the intervention, perceived need for the intervention	Student evaluative questions	There is a need for positive education at Blackwood High School.
	Student focus group	Do you think there is a need for something like this (a program to help your wellbeing and develop thinking skills) at the school?
Buy-in – the extent to which the recipient believes the intervention is worthwhile	Student evaluative questions	Positive education seems like a worthwhile thing to do.
	Student focus group	How well was the positive education you did in care group this year accepted by you and your peers?
Self-efficacy – extent to which recipient feels the intervention is able to bring about change	Student evaluative questions	After doing some positive education this year, I have a better knowledge and understanding of my own thoughts and wellbeing. Some skills I learned in positive education have helped me to become a more capable student.
Motivation to participate in the intervention	Student evaluative questions	I felt motivated to participate in the positive education sessions.
Benefits – knowing the beneficial outcomes of the intervention	Student focus group	How many of you know the possible benefits of positive education? How important was it to know this?
Collaboration – the extent to which recipients' contributions are sought and valued	Student evaluative questions	It was good that some BHS students were involved in planning and explaining positive education.

*Note.* Except where stated, all student evaluative questions and teacher pre-PEPP items were answered on a 5-point agree-disagree Likert scale.



Table 2.4

*Exploration of Implementation: Provider factors.*

<b>Factor</b>	<b>Investigation setting</b>	<b>Item</b>
Perceived need for/relevance of, and benefit/effectiveness of intervention	Teacher pre-PEPP questionnaire	I understand the rationale behind positive education. There is a need for positive education at Blackwood High School.
Training of practitioners	Teacher post-PEPP questionnaire	In retrospect, I would have liked to do additional specific positive education training before teaching it to my students
Motivation to implement the intervention	Teacher pre-PEPP questionnaire	I will be able to motivate my students to participate in positive education.
Self-efficacy – extent to which provider feels they are able to do what is required and their beliefs about the program’s potential to bring about change	Teacher pre-PEPP questionnaire	I am convinced that I am able to successfully teach positive education content to even the most difficult students.
Practitioner skill and experience (openness to change/new practices, perceived divergence of research based intervention with usual teaching practices)	Teacher pre-PEPP questionnaire	Years of teaching experience [open-ended] I will be able to teach positive education even when I am opposed by sceptical colleagues.
Practitioner’s understanding of the theory underlying intervention, how and why it should be implemented	Teacher pre-PEPP questionnaire	I understand the rationale behind positive education.
The intervention’s intuitive appeal to the provider	Teacher pre-PEPP questionnaire	I believe positive education will help the psychological health of my students.
Level of support/resources	Teacher discussion	How satisfied were you with the level of support you received from the teaching materials/resources and the school in implementing the PET?

*Note.* Except where stated, all student evaluative questions and teacher pre-PEPP items were answered on a 5-point agree-disagree Likert scale.

Table 2.5

*Exploration of Implementation: Organisational factors.*

<b>Factor</b>	<b>Investigation setting</b>	<b>Item</b>
Vision, efficacy and buy-in of staff, work climate, norms regarding change	Deputy principal interview	How well did the year nine teachers 'buy-in' to the positive education trial?
Personnel stability	Deputy principal interview	Were there any changes in personnel during the trial?
Organisational readiness for evidence-based programs (values, resources, skills & ongoing evaluation)	Deputy principal interview	In retrospect, was the school ready for this step in the implementation of positive education? Regarding skills, resources etc.
	Analysis of BHS Strategic Directions 2013-2018 (Blackwood High School, 2012)	
Shared decision making, collaboration, input of stakeholders	Student evaluative questions	It was good that some BHS students were involved in planning and explaining positive education.
	Teacher post-PEPP questionnaire	I am satisfied with the level of input I had in the positive education trial.
	Analysis of DECD Strategic Plan 2014-2018 (Department for Education and Child Development, 2013)	
Communication & ongoing support – the extent to which frequent and open communication and problem solving is encouraged once implementation begins, and mechanisms allowing it	Teacher discussion	Was there open communication with the school? With each other?
	Deputy principal interview	Was there an open communication channel between the school (you, Lee, Janet) and the year nine teachers? Among the year nine teachers?
Specific staffing considerations – leadership and administrative support	Deputy principal interview	Was there adequate leadership and administration support?
Incentive and reward – for both recipient and provider	Deputy principal interview	In retrospect, was there adequate incentive and reward for the students? The teachers?
Level of resources	Deputy principal interview	After this process, what are your thoughts on the level of resources?

*Note.* Except where stated, all student evaluative questions and teacher pre-PEPP items were answered on a 5-point agree-disagree Likert scale. DECD=Department of Education and Child Development.

Table 2.6

*Exploration of Implementation: Contextual factors.*

<b>Contextual factors</b>		
<b>Factor</b>	<b>Investigation setting</b>	<b>Item</b>
Political support or lack thereof	Deputy principal interview	How supported is the organisation to implement positive education? By the school board? The DECD?
	Analysis of DECD Strategic Plan 2014-2018 (Department for Education and Child Development, 2013)	
Parental and community member engagement	Parental questionnaire	<p>Were you aware of the positive education trial your child participated in this year? [Y/N]</p> <p>How did you interact with your child regarding positive education? [5-point Likert scale]</p> <p>How did positive education impact on your child? [5-point Likert scale]</p> <p>How satisfied were you with the school's trial of positive education with year nine students? [5-point Likert scale]</p> <p>How important is it that the school engages in some social and emotional learning such as positive education? [5-point Likert scale]</p>

*Note.* Except where stated, all student evaluative questions and teacher pre-PEPP items were answered on a 5-point agree-disagree Likert scale. DECD=Department of Education and Child Development.

For analysis, data were first electronicised and entered into N-Vivo. Data were triangulated across the various datasets using the 'following a thread' method (Moran-Ellis et al., 2004; Moran-Ellis et al., 2006). The approach aims to preserve the integrity of each dataset, such that the resulting analysis is "greater than the sum of the (methodological) parts" (Cronin, Alexander, Fielding, Moran-Ellis, & Thomas, 2008, p. 584, p. 584).

Datasets were conceptually placed alongside each other and electronically coded into 'nodes' using the tools in N-Vivo. Qualitative data analysis software is thought to be based on grounded theory approaches to data analysis, in that the electronic tools enable the data to 'speak for themselves' (Welsh, 2002). The lead researcher continued this grounded inductive approach (Moran-Ellis et al., 2006) to

identify key themes or ‘threads’ and questions requiring further explanation at initial analysis. These threads become more focused as they are followed across both qualitative and quantitative components of the study (methodological triangulation) and across sources of data (data triangulation) to generate a multi-faceted picture of the phenomenon (Johnson et al., 2007; O’Cathain, Murphy, & Nicholl, 2010). Agreement, partial agreement, silence, and dissonance were considered by using tools in the N-Vivo program; N-Vivo allowed for comprehensive searches, various quantitative analyses, and quantitative visualizations of the data.

## **2.4 Study three**

### **2.4.1 Outline**

Study two found the recipient characteristic of gender to be important in how the PEPP was received. Study three explored gender as a factor in implementation further, examining the intersection of gender, mental health and physical activity. Studies consistently find that physical activity links with mental health, females engage in less physical activity than males, and females have poorer mental health than males. This research aimed to investigate if physical activity’s mental health benefit depended on gender, and if physical activity may explain part of the gender gap in mental health.

The whole school measure from 2014-2017 provided four waves of cross-sectional data used for analyses in study three (total cases;  $N=1,756$ , age 13-18). Gender differences in physical activity and mental health were examined, associations of physical activity with mental health were explored, moderation analyses were used to see if gender moderated the association of physical activity and mental health, and mediation analyses were used to explore the influence of physical activity on the link between gender and mental health.

### **2.4.2 Rationale**

Study two showed recipient characteristics (i.e., gender) might impact how a student experiences an intervention, and their need for that intervention. Initial data collected at the school in 2014 revealed a gender gap in mental health; females

measured higher in Depression, Anxiety and Stress than did males. There was also a gender gap in physical activity, where females engaged in less physical activity than males. In addition, there was an association of physical activity with all markers of mental health. Study three examined the intersection of these findings using data from additional years. In addition, it also served to consider the evidence for physical activity might have as a positive education intervention (discussed in 1.8.4 above). Physical activity has the potential to address many of the implementation considerations raised in studies one and two and be a 'stellar' positive psychology intervention (Hefferon & Mutrie, 2012). Additionally, I was interested if females' comparatively lower participation in physical activity than males, could explain part of their comparatively poorer mental health.

#### **2.4.3 Data collection**

Data for study three were collected in the whole school online questionnaire of 2014, 2015, 2016 and 2017 (outlined above in section 2.3.5.1). Data were treated in the same way as study two (outlined above in section 2.3.5.3).

#### **2.4.4 Statistical analyses**

To determine the statistical analysis for the objectives of study three, I applied to the University of Adelaide's Faculty of Health Sciences Statistical Service (FHSSS). The FHSSS statisticians examined my four years of cross-sectional data and recommended a mediation approach for the main analysis. Analyses would start with 2017 data, then be replicated using data from previous years (2016, 2015, 2014). Data would not be combined due to the likelihood of repeated cases.

This study uses cross-sectional data, thus there is no way of establishing the causal ordering of the observed relationship between physical activity and mental health. Experimentation or longitudinal research is more likely to establish causal associations, but this was not possible with the anonymous data collection that the Department of Education and Child Development preferred until 2017. Many argue that mediation should not be used with cross-sectional data (e.g., Maxwell & Cole, 2007), however there are counter arguments pertaining to constraints on; resources, time, the availability of data, the generosity of research participants, and research ethics (Hayes, 2017). Experimental and longitudinal research might not always be

possible, yet there can still be valuable knowledge derived from mediation analyses of cross-sectional data. Disabato (2016) argues that important theoretical contributions result from cross-sectional mediation analyses. The example he uses is the seminal paper on chronic pain by Rudy, Kerns, and Turk (1988), which used cross-sectional mediation. It helped lay the foundation for the cognitive-behavioural theory and therapy of chronic pain by showing life activities and self-control mediated the relationship between chronic pain and depression. However, limitations of this type of data should be accepted and interpretations should be couched with the appropriate caveats and cautions (Hayes, 2017).

Figure 2.3 illustrates the models tested in study three. As illustrated, the mediation model uses gender as the predictor, thus the link between physical activity and mental health is the only bi-directional arrow. That is, mental health cannot cause gender, and physical activity cannot cause gender. I acknowledge the causal direction in the association between mental health and physical activity cannot be determined with these data. It may be that individuals who do more physical activity experience better mental health, or it may be that individuals who experience better mental health tend to do more physical activity.

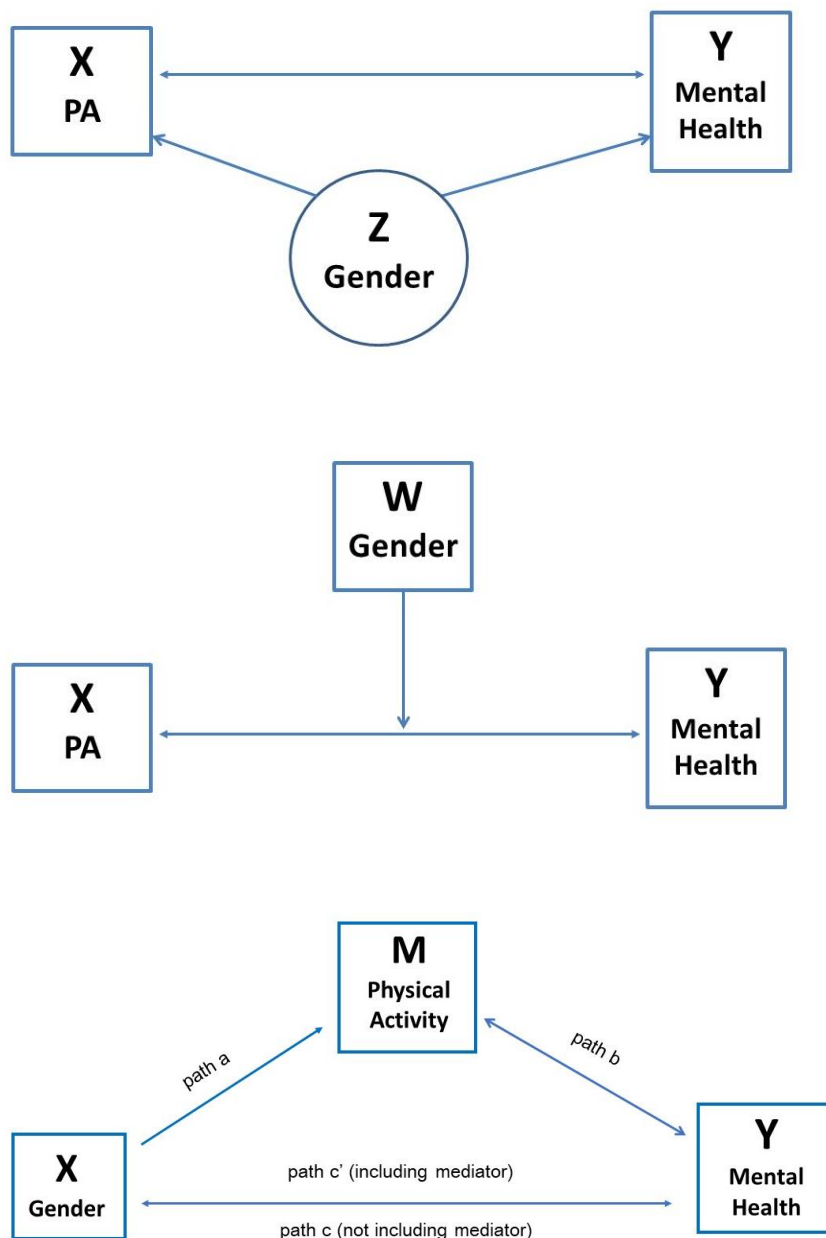


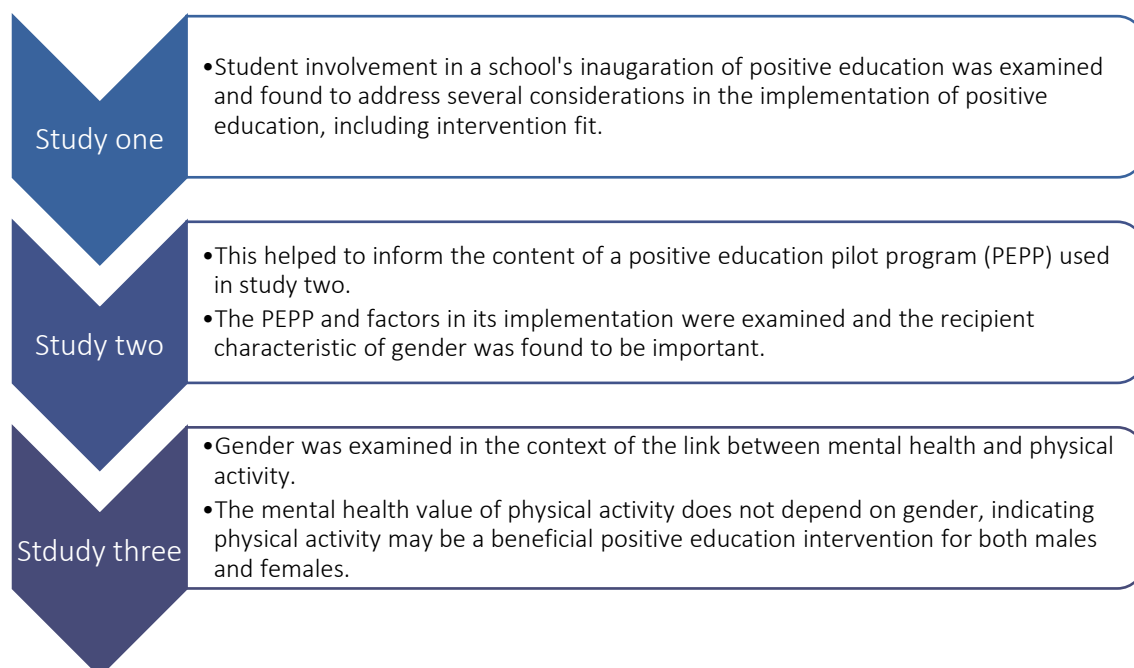
Figure 2.3. Models examined in study three.

With this I acknowledge I am not using mediation to help to understand a causal relationship (Wu & Zumbo, 2007), rather I want to explore the potential influence of an intervening variable on an association between two other variables (Hayes, 2017). There are multiple approaches to mediation analyses; I took a 'test of joint significance' approach recommended by (Hayes, 2009), which balances Type I error with statistical power (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). In his paper, Hayes advocates for a "more modern way of thinking" about the analysis of intervening variable (p.408). He suggests the commonly used, 'causal steps'

approach of Baron and Kenny (1986) is not optimal, and explains why the significance of path c is not a prerequisite for mediation. The causal steps approach, though historically popular, has been widely replaced by methods of testing for mediation that are more statistically powerful, make fewer assumptions of the data, and are more logically coherent. Hayes (2017) explains the limitations of the causal steps approach in greater depth in his recent book.

## 2.5 Summary

This exegesis has provided the context, rationale, and additional methodological information for the three studies that make up this thesis. It also provides rationale regarding research design and measurement instruments. Figure 2.4 summarises the main connections between studies.



*Figure 2.4. Main points of connection between studies*

Against the backdrop of this discussion, the three studies are now presented in manuscript form in Chapters 3, 4, and 5. A short passage establishing context, and a statement of authorship is included in each chapter. Chapter 6 will provide a discussion of findings relating to both knowledge and practice.



### 3 Chapter 3 – Study 1

Study one examined student involvement in the inauguration of positive education at an Australian public high school. Stakeholder involvement has been used to address program implementation considerations such as buy-in (e.g., Waters & White, 2015), and intervention fit (e.g., Blanchard & Fava, 2017; Burns & Birrell, 2014), and it uses the school's own resources – its students. Findings are discussed in terms of what they mean for student buy-in, intervention fit and accessibility. Personal benefits to students involved were also studied.

#### Statement of Authorship

Title of Paper	The student voice in well-being: a case study of participatory action research in positive education
Publication Status	<input checked="" type="checkbox"/> Published <input type="checkbox"/> Accepted for Publication <input type="checkbox"/> Submitted for Publication <input type="checkbox"/> Unpublished and Unsubmitted work written in manuscript style
Publication Details	Halliday, A. J., Kern, M. L., Garrett, D. K., & Turnbull, D. A. (2018). The student voice in well-being: a case study of participatory action research in positive education. <i>Educational Action Research</i> , 1-24. doi:10.1080/09650792.2018.1436079

#### Principal Author

Name of Principal Author (Candidate)	Amber Halliday		
Contribution to the Paper	Collected data, interpreted data, drafted and submitted manuscript, made revisions and acted as corresponding author.		
Overall percentage (%)	85%		
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
Signature		Date	19/1/19

### Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

- i. the candidate's stated contribution to the publication is accurate (as detailed above);
- ii. permission is granted for the candidate to include the publication in the thesis; and
- iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Deborah Turnbull		
Contribution to the Paper	Supervised in development of work, refining direction of methodology employed in the research. Provided editorial input by commenting and refining material presented in drafts.		
Signature		Date	21/1/19

Name of Co-Author	Margaret Kern		
Contribution to the Paper	Supervised in development of work, refining direction of methodology employed in the research. Provided editorial input by commenting and refining material presented in drafts.		
Signature		Date	20/1/19

Name of Co-Author	David Garrett		
Contribution to the Paper	Consulted on and supervised collection of data.		
Signature		Date	21/1/19

The text, figures and tables presented in this chapter appear the same as published, except for minor formatting changes such as renumbering for consistency within the thesis. References and acknowledgments have been included in those of the thesis.

## **The student voice in wellbeing:**

### **A case study of participatory action research in positive education**

#### **3.1 Abstract**

Positive education blends academic learning and student wellbeing. Although research and application in positive education is growing, most has involved psychologists and educators applying strategies in schools, with little research that involves student voices in the development and implementation of a school's positive education strategy. Assumptions are frequently made about what is best for student wellbeing, with little input from the students themselves. This paper describes a case study of participatory action research (PAR) carried out by students (N=10) at a publicly funded Australian school aiming to implement positive education. PAR is a form of collective inquiry undertaken by the people that the issue directly affects. The PAR group researched the school community regarding wellbeing during the school year. Mixed methods examined developmental benefits (wellbeing, self-efficacy, autonomy, social and emotional assets, and other competencies). Student involvement allowed the school to have greater understanding of their students' wellbeing, and student-led communication about positive education was considered to have laid the groundwork for its implementation. Benefits were found among the PAR students, particularly in engagement and self-efficacy. This realistically scaled study suggests that involving students using a framework of PAR is a promising, accessible, evidence-based, and developmentally beneficial approach to the implementation of positive education.

**Keywords:** adolescents, participatory action research, positive education, students, wellbeing

### 3.2 Introduction

Positive education is premised on the notion that schools ought to be places where students cultivate strengths, virtues, and social and emotional competencies, in addition to developing academic-related skills (Seligman et al., 2009). It aims to use evidence-informed interventions and practices to support student wellbeing, defined as the ability for an individual to feel good and function well (Huppert & So, 2013). It is theoretically underpinned by positive psychology, which is the scientific study of positive experience, individual traits and institutions (Seligman & Csikszentmihalyi, 2000).

Over the past five years, interest in positive education has increased rapidly, especially across Australia (Slemp et al., 2017). However, despite the enthusiasm, major gaps exist between research and practice. The positive psychology interventions (PPIs) adapted for use in positive education have a strong evidence base (e.g., Bolier et al., 2013; Sin & Lyubomirsky, 2009; Weiss et al., 2016) but less is known about their efficacy within complex school environments. Frequently, assumptions are made about what might be best for student wellbeing, with little input from the students themselves.

In this paper, we discuss several pertinent considerations in the implementation of positive education and examine student involvement through a framework of participatory action research (PAR) as a pathway toward creating more effective positive education. Specifically, we ask the following research questions. First, how can student-led PAR's outcomes impact the implementation of positive education? We consider how students help the school fit appropriate positive education to the wider student body, and we consider the extent to which student led-PAR can foster students' buy-in to the concept of positive education. Second, how does the PAR process impact the students conducting it? We consider whether student-led PAR corresponds to developmental benefits in students; do students report gains in personal competency, agency and an increased connection with the other students and the school itself.

## **Positive education**

Positive psychology encompasses a preventative approach that aims to understand and support optimal functioning (Seligman & Csikszentmihalyi, 2000), and address psychological ill-being (Seligman et al., 2005) in individuals, organizations, and communities. Research and application from this positive perspective has grown rapidly over the past two decades, spreading across numerous fields (Rusk & Waters, 2013), and developing a number of empirically-supported interventions and programs (Parks & Biswas-Diener, 2013). Despite this, the field has been criticized for an over-emphasis on positivity, individualism, and ignoring social and structural factors that influence individual outcomes, amongst other criticisms (e.g. Held, 2004; Lazarus, 2003; Miller, 2008). Thus, recent research in positive psychology has moved toward a more holistic understanding of resilience, adaptive functioning, and group eudaimonia (Hart & Sasso, 2011).

The application of the positive perspective to education has been labelled 'positive education' (Seligman et al. 2009). Positive education developed in part as a response to the significant problem of psychological ill-being (Green, 2014). Epidemiological evidence reveals that many lifetime mental disorders begin in late childhood and adolescence (Kessler et al., 2007), thus prevention or early intervention in adolescence may help to prevent adult psychological ill-being, or reduce its severity and duration (McGorry et al., 2011). However, the application of positive psychology principles in schools is complex, with many factors that influence the uptake and effectiveness of intervention efforts.

### ***Considerations for effective positive education***

There are several considerations that increase the likelihood of effective programs, and may be helpful to apply to the implementation of positive education. First, programs need to be accessible. Positive education has been implemented and documented in several well-resourced schools that have benefited from expert consultants, extensive teacher training and collaboration with universities to inform, assess, and motivate their efforts (e.g. Kern, Waters, Adler, & White, 2015; Norrish, 2015). However, these schools are not constrained by the resource and curriculum demands that constitute the reality for many schools. Involving students in systematic stakeholder research potentially offers a way to inaugurate positive

education in a school in a cost-effective manner, using the valuable resources that already exist within the school (i.e., the students themselves), rather than drawing on expensive external resources.

Second, effective programs use interventions that are compatible with its recipients (Durlak & DuPre, 2008). Although various positive education programs and curricula have been developed, the context of the school matters. The same program or intervention that is effective in one school may not be effective or can even be harmful in another. There is little guidance available around how to choose the positive education interventions (PEIs) or practices (PEPs) that will be best for a particular school. Students have unique and useful knowledge and perspectives (Levin, 2000) that, when utilised in conjunction with baseline data and expert knowledge, can help to identify the most appropriate interventions and practices for those students and their peers.

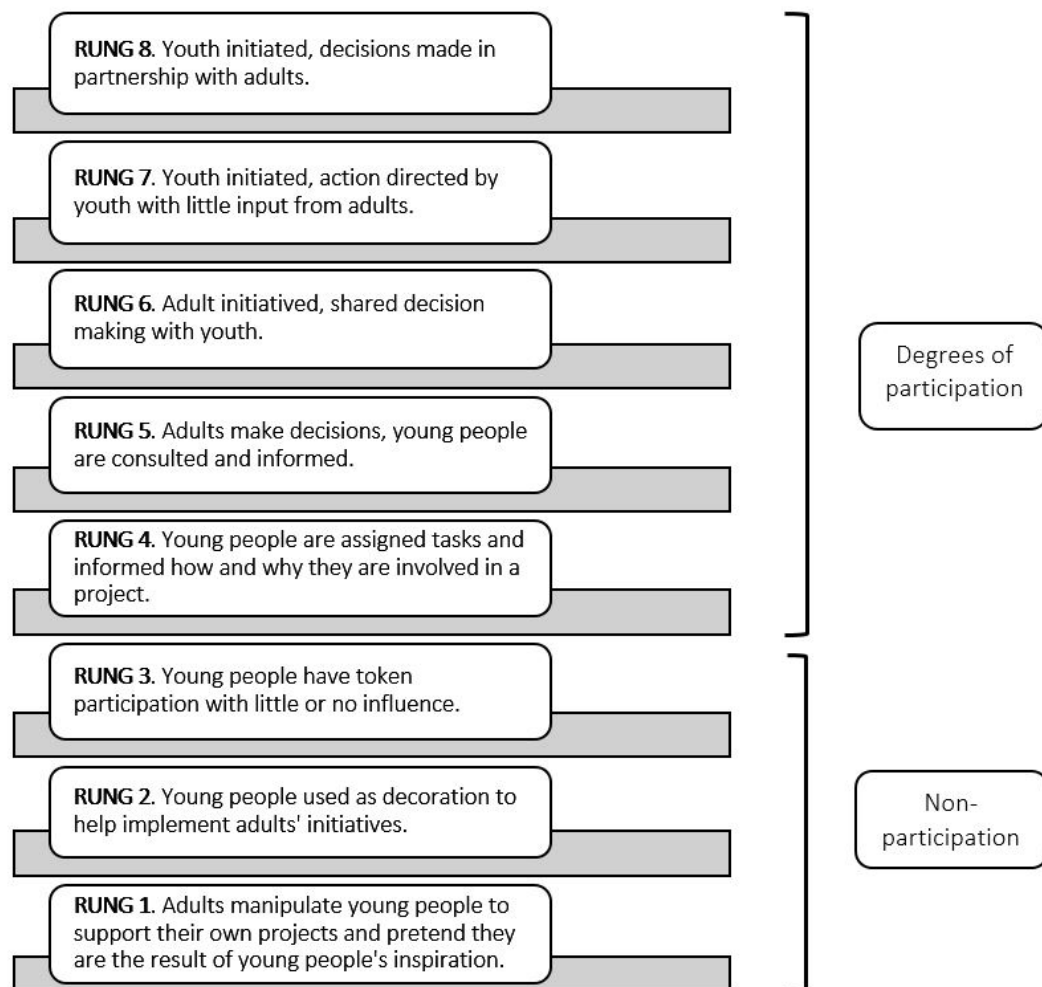
Third, effective programs require engagement and buy-in from all stakeholders, students as much as teachers (Levin, 2000), but does not automatically occur with all students and all staff in all schools. Participation is considered a vehicle for buy-in and commitment to change in educational reform (Levin, 2000).

Further to these considerations is bottom-up school reform. Change initiatives in schools typically are top-down in nature, with school leaders introducing a policy or program that staff are expected to implement. Reynolds (2005) suggests that change in schools is facilitated by the inclusion of both a top-down and bottom-up process – top-down providing policy framework, resources and operational plans; and bottom-up involving energy and action. For example, at the beginning of positive education in an independent K-12 all boys' school in South Australia, appreciative inquiry (AI) was used as a collaborative, strengths-based, bottom-up approach to allow school staff and leadership to come together and collectively implement wellbeing at the school (Waters & White, 2015). Staff conducted the AI; this allowed them to add important 'ground-level information' and give insight to the leadership team on relevant matters 'at the chalk-face' (p.22). Waters and White (2015) concluded that the AI process allowed staff to be empowered and active members of the change process, thus engendering their buy-in to positive education.

While including staff in decision processes is important, students are also important stakeholders. Students are at the chalk-face of their own lives and are best placed to give ground-level information on what they will and will not respond to in the determination of appropriate positive education content (Boyle, 2012). It is students who are the recipients of positive education, therefore their ownership and buy-in is vital for the desired outcome (Jensen & Simovska, 2005; Leadbeater, Marshall, & Banister, 2007); this can be aided by the empowerment, ownership and shared decision making that is characteristic of participatory approaches (Cargo & Mercer, 2008).

### **Participatory action research**

In the current study, student-led PAR was used as a bottom-up approach for student involvement in positive education. PAR is a systematic approach to collective investigation of an issue by the people whom the issue directly affects (Baum et al., 2006). It blends the strengths of the academic 'experts' involved with the strengths and lived experience of participants (Gosin, Dustman, Drapeau, & Harthun, 2003). Hart's Ladder of Participation (1992) is a widely recognized theoretical framework to conceptualise the levels of engagement between adults and children. Rungs are arranged from nonparticipation at Rung 1 to true participation at Rung 8 (see Figure 3.1). Prior to commencement, authors and school staff deemed this project to be placed at Rung 6, as it was initiated by adults, but the decision making is shared with young people.



*Figure 3.1. Ladder of Children's Participation adapted from Hart (1992).*

PAR establishes 'truth' through participation of crucial stakeholders, using multiple sources of and methods for investigation, and by being systematic and transparent (Crane & O'Regan, 2010). Truth is seen as contextual: a shared understanding within a particular local and community context. For example, schools from differing socio-economic backgrounds may have different understandings of wellbeing (Crivello, Camfield, & Woodhead, 2009), and those understandings are recognized and understood by bringing together the perspectives of those involved. There are several key reasons for using PAR to include young people in matters that affect them (Head, 2011). First, young people have the right to a voice. Article 12 of the UNICEF Convention on the Rights of the Child states that when adults are making decisions that affect children, children have the right to express an opinion and have that opinion taken into account (United Nations General Assembly, 1989). Young



people should be able to articulate their views on issues that matter to them and this be given weight in accordance with their age and maturity (Lansdown et al., 2014). According to Shier (2001), rung 6 of Hart's ladder is the level of youth involvement needed to be consistent with an endorsement of the UNICEF Convention on the Rights of the Child.

Second, the involvement of young people can help to make an intervention more effective through appropriate intervention fit (Proctor et al., 2011) and student buy-in (Levin, 2000). Decisions on programs designed for young people that are fully informed by young people's experiences and perspectives will be more relevant and therefore more effective than those that lack that perspective (Lansdown et al., 2014). Adults do not always have sufficient insight into the lives of young people, and thus decisions that are made often ignore the reality that young people face (Checkoway, 2011). Young people have valid scope to inform us what will and will not work in practice and are best placed to understand what they will and will not respond to (Boyle, 2012). Adolescents whose voices are listened to also experience greater investment regarding the future of an implementation (Lind, 2007).

Third, young people can reap developmental benefits from participation. There is a strong theoretical rationale that PAR has the power to transform and strengthen youth development outcomes (Ozer & Douglas, 2013). PAR has particular benefits to students' feelings of competence, agency, and relatedness which are three fundamental and universal psychological needs central to human motivation, wellbeing (Ryan & Deci, 2000) and school success (Mitra, 2004). Competence refers to having skills and confidence in those skills. Studies suggest that PAR improves communication skills, problem solving and critical thinking, self-efficacy, confidence, self-regulatory capacity, public speaking, research skills, overall wellbeing, and helps participants be better students (e.g., Berg et al., 2009; Flicker, 2008; Lansdown et al., 2014; Mitra, 2004; Samdal & Rowling, 2015). Agency refers to the ability to contribute to decision-making, exerting influence, and power. Studies suggest that PAR increases a sense of personal agency, the sense of being heard and feeling useful, empowerment, and collective efficacy (e.g., Berg et al., 2009; Flicker, 2008). Relatedness refers to positive, supportive relationships with others. Studies suggest

that PAR increases novel social networks and interactions, and fosters attachment to the school (e.g., Mitra, 2004; Ozer & Wright, 2012).

While there is considerable academic, organisational and government literature on stakeholder research with youth, to our knowledge, student-led PAR has not been used in the development, implementation and sustainability of a positive education strategy. The frameworks for positive education that do exist emphasise work with staff as a starting point, the rationale being that if the wellbeing of the staff is nurtured, it helps them to be authentic role models for the students to whom they teach wellbeing concepts (Norrish, 2014). The current study, while not disputing the veracity of this claim, investigates involving students in parallel with teachers at an initial stage. In the present study, PAR was used to involve students in the implementation of positive education, providing an empowering process for them to have input and systematically gather input from the school community.

### 3.3 Background

The present case study examines the utility of involving students in the initial stages of the implementation of a positive education strategy at a single Australian government school (i.e., a publicly funded/state school) in South Australia in 2015. That year, 877 year 8-12 students attended the school, and 88 teaching and non-teaching staff were employed. The school has an Index of Community Socio-Educational Advantage (ICSEA)<sup>2</sup> of 1060, and has 10% of students with a language background other than English (Australian average = 20.05%; Australian Curriculum Assessment and Reporting Authority, 2015). The school; namely the principal, deputy principal, and student wellbeing team; had been interested in implementing school-wide positive education to their compulsory school activities for a number of years, supporting selected teachers to receive training and professional development, and collecting data on wellbeing, but it had not yet implemented a formalised positive education curriculum.

---

<sup>2</sup> ICSEA provides an indication of the level of educational advantage of the school's student population relative to those of other schools using the geographical location of the school, the proportion of indigenous students catered for, and the occupation and level of education of students' parents' (Australian Curriculum Assessment and Reporting Authority, 2012). The Australian average is 1000.

In their plans for implementing positive education, the school selected PERMA+ as a guiding framework. This model is adapted from a theoretical model (Seligman, 2011) which suggests that wellbeing is comprised of five domains: positive emotions, engagement, relationships, meaning, and accomplishment. The + indicates additional concepts that contribute to wellbeing, such as sleep, nutrition, and physical activity.

Ten students from years 9 to 11 (mean age = 14.9 years, SD = .99; 50% female) took part in the participatory action research (the 'PAR group'). At the deputy principal's request, they were volunteers from the 2015 Student Representative Council (SRC). As background learning, all SRC members participated in a wellbeing workshop given by school teachers who had previously received training in positive education. The first author also gave a brief presentation on PAR and the current study at one of the SRC meetings. Participants received South Australian Certificate of Education (S.A.C.E.) credits for participating in the study.

The impact of PAR outcomes is examined in a narrative description, and the impact of the PAR process is investigated using mixed methods. For the latter, a matched comparison group was recruited to control for any school-wide effect that may help to explain findings within the PAR group. A group of ten students was purposively chosen by an assistant principal to ensure the group was closely matched to the PAR group on gender and ability. This group completed briefer measures than the PAR group and received no incentive. One student from this group withdrew during the process, leaving nine in the final comparison group (mean age 15.2 years, SD = 1.2; 55.6% female).

### **PAR procedure**

The PAR workshops and research activities were designed in coordination with school staff and were constrained by the time the school had available. As summarised in Table 3.1, six workshops were conducted in lesson time fortnightly (excluding school holidays). Workshops began with introductions, a focus on the concept of wellbeing, and background information on positive education. In workshop 2, teaching focused on the PERMA+ domains and the PAR methodology. Students considered the PAR process and made decisions around data collection.

Workshop 3 involved students scrutinizing barriers and enablers to wellbeing, relevant to the school community. In Workshops 4-6, students considered strategies for disseminating information, presenting information, and finalising video presentations.

Table 3.1  
*Summary of PAR workshop themes and activities assigned*

<b>Workshop</b>	<b>Topical theme</b>	<b>PAR activity</b>
<b>1</b>	<ul style="list-style-type: none"> <li>• Introductions and get-to-know</li> <li>• Review of wellbeing concepts</li> <li>• Review of 2014 school wellbeing data</li> <li>• Positive education background information</li> </ul>	Think about PERMA+, talk to peers and bring examples from each domain to next workshop.
<b>2</b>	<ul style="list-style-type: none"> <li>• Compilation of PERMA+ domain examples</li> <li>• Theoretical background</li> <li>• Research methods involved in PAR</li> <li>• Data collection discussion / decision</li> </ul>	Collect data from parents, teachers and other students on their barriers and facilitators of wellbeing.
<b>3</b>	<ul style="list-style-type: none"> <li>• Compilation of barriers and facilitators data</li> <li>• Discussion</li> </ul>	Note effective and appropriate forms of communication from the school to students.
<b>4</b>	<ul style="list-style-type: none"> <li>• Devise wider communication strategy</li> <li>• Determine essential information</li> </ul>	Form positive education logos. Compile diary page. Present at whole school assembly.
<b>5</b>	<ul style="list-style-type: none"> <li>• Finalise year-level assembly presentations</li> <li>• Devise focus groups questions</li> </ul>	Trial and critically review some positive education practices.
<b>6</b>	<ul style="list-style-type: none"> <li>• Finalisation of video presentation</li> </ul>	No activity assigned.
<b>Post-workshops</b>		Presentation at year-level assemblies. Focus groups in years 8 & 10.

Note. PERMA+ is the school's chosen wellbeing framework (adapted from Seligman, 2011); P-positive emotions, E-engagement, R-relationships, M-meaning, A-accomplishment, + representing additional concepts that contribute to wellbeing such as sleep, nutrition and physical activity.

The PAR process used an eco-critical approach, which situates individuals in a social system where intervention at more levels than just the individual, creates

meaningful change (Berg et al., 2009). Thus, early in the PAR process, students learned about Bronfenbrenner's (1977) Ecological Systems Theory of Development, to explore how issues are affected by multiple layered domains. Bronfenbrenner's work has been influential in mental health and wellbeing initiatives in schools, promoting the holistic approach (Shute & Slee, 2016). PAR students also learned about qualitative research methods, ethical considerations, purposive and representative sampling, communication skills and possible adverse events that may be encountered.

Although these workshops were observed by a school staff member and facilitated by the study's first author, students were considered the experts. Adults were instructed to consider their role as learning about and recording observations, and as possible moderators, being mindful not to regress to usual power relationships. The adults remained responsible for the overall administration and coordination of the PAR research initiative.

Students subsequently conducted a series of research activities that built upon this background knowledge. Activities were observed by the study's first author, who had received all appropriate working with children clearances, and were overseen by a school counsellor. Field notes were taken throughout, electronicised, and stored in NVIVO. Due to practicalities, one of the research activities and one of the presentation activities were conducted after the final workshop.

### **PAR process analysis**

Examination of the PAR process considered how it might lead to positive developmental outcomes for students involved. The process was evaluated using a self-determination theory framework to consider if students reported gains in autonomy, competence and relatedness (SDT; Ryan & Deci, 2000). Students in the PAR group and students in the comparison group completed a self-report questionnaire prior to commencement of the first workshop (T1) and at the conclusion of the final workshop (T2). The questionnaire included: demographic questions about participants' age, gender and year level; and standardised measures (42 quantitative items). Twenty additional quantitative and qualitative items of the author's own design were given to the PAR group at T2 (11 qualitative items and 9

qualitative items). Two students were also separately interviewed by a research assistant after the final workshop. Wellbeing (EPOCH; Kern et al., 2016) was measured to provide indications of functioning in five domains: Engagement, Perseverance, Optimism, Connectedness and Happiness. Self-efficacy (GSE; Schwarzer & Jerusalem, 1995) was measured, gauging an optimistic self-belief of the ability to perform new or difficult tasks, or to cope with adversity. Students' social and emotional competencies were measured using the adolescent (SEARS-A-SF) and teacher-rated (SEARS-T-SF) social and emotional assets and resilience measure (Merrell, 2011). Each student's pastoral care teacher completed the SEARS-T-SF within several days of the T1 and T2 assessments.

Due to the small sample, Reliable Change Indices (RCI) were used in the analysis of change in standardised measures. A reliable change indicator is a standardized measure of the magnitude of change using the reliability of a scale that allows a determination of whether a change observed for an individual case is greater than what might be expected due to measurement error (Evans et al., 1998). It is a method to help determine if response change observed is a genuine change, or simply random error. The formula recommended by Evans et al. (1998) was used.

Qualitative data were collected in open-ended questions within questionnaires, and in interviews conducted by a research assistant. These were then transcribed verbatim by the author. We purposively chose interviewed students for their articulation and communication, as many students in the PAR group were often reserved and had been comparatively quiet in PAR workshops. Due to the small sample size, the brevity of the participants in written responses and only two students being interviewed due to time constraints, we are unlikely to have reached data saturation.

### **3.4 Results**

#### **PAR outcomes**

Research question 1 asked how the outcomes of student-led PAR conducted in the initial stages of the implementation of positive education can help fit appropriate positive education content to students, and whether PAR can enable

ownership and buy-in among students. Table 3.2 summarises the PAR group outcomes.

Table 3.2

*Summary of PAR group (N=10) outcomes*

<b>Facilitating appropriate fit through increasing understanding</b>	The PAR group learned about and raised awareness of PERMA+.
	The PAR group collaborated on positive education content and terminology.
	The PAR group researched barriers and facilitators to wellbeing within the BHS community.
	The PAR group trialled some positive education programs and gave feedback.
	The PAR group took a deeper look at what may motivate students to participate in Positive Education through focus groups.
<b>Building whole school buy-in through student-led communication</b>	The PAR group helped develop the strategy for the communication of positive education to students.
	The PAR group developed several BHS positive education logos.
	The PAR group produced a positive education introductory video.
	The PAR group compiled the positive education 'essential' info into a page for the 2016 diary to be given to every student in the school.
	The PAR group helped introduce Positive Education to the students at assemblies in 2016.

Observations made suggested that PAR helped facilitate the school's understanding of student wellbeing, allowing for better informed decisions about what positive education content should be included in the program. PAR students also helped to communicate the concept of wellbeing and positive education to the wider school community, which was thought to be crucial in facilitating buy-in of the wider student body.

PAR students first explored the components of PERMA (Seligman, 2011), the school's chosen wellbeing framework, by giving examples in each domain from their own lives. The overlapping nature of the five components was also discussed. Specifically, students discussed Positive Emotion, Engagement and Relationships, making notes on butcher paper. Meaning and Accomplishment were discussed but not noted. Personal interaction was a prominent feature of discussions, including

‘spending time with friends’ (relating to Positive Emotion), ‘building things in tech class’ (relating to Engagement); and ‘winning at basketball’ (relating to Accomplishment). Students had difficulty coming up with examples from their own lives related to the domain of Meaning. PAR students then began talking about the PERMA wellbeing framework to their peer network as well as creating spontaneous graphical displays around the school presenting PERMA+ (Figure 3.2).

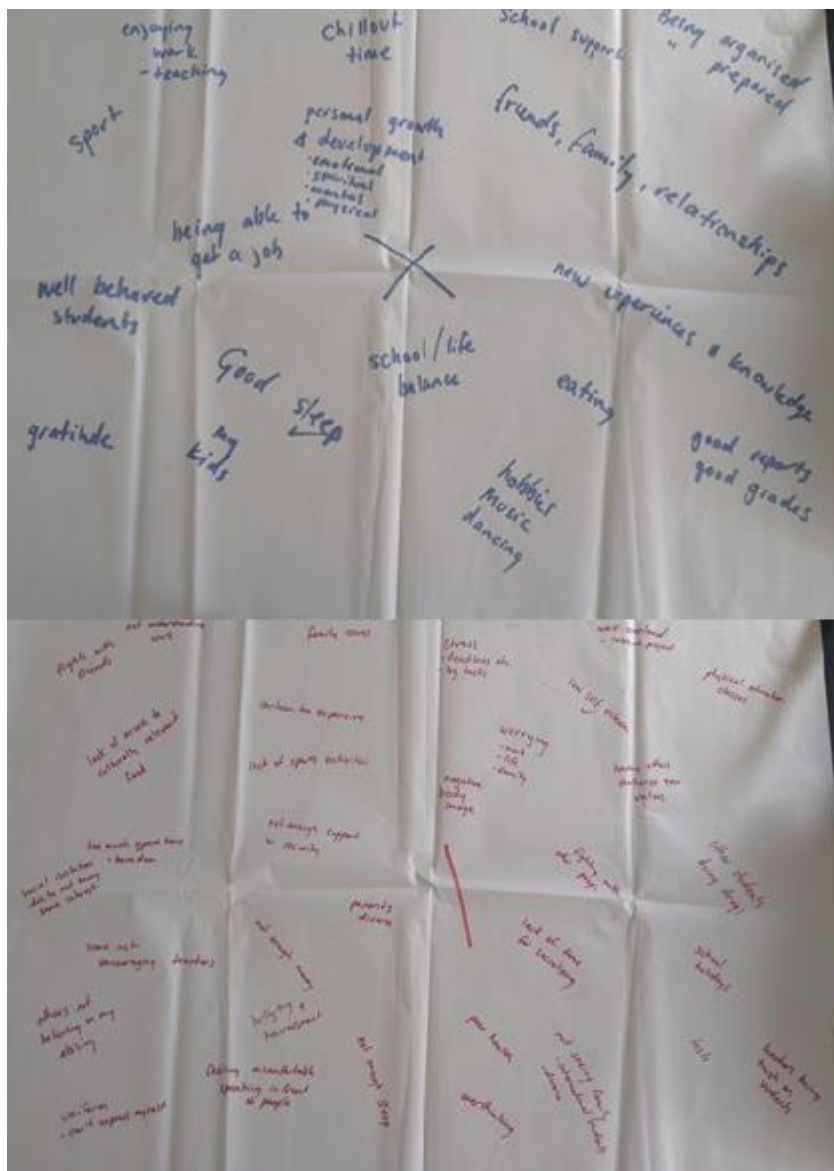


Figure 3.2. PERMA+ as drawn by a member of the PAR group.

The PAR group discussed and defined their school community as students, teachers, parents, non-teaching school staff and local employers. Like the youth described in Berg et al. (2009), the PAR group learned about the domains in Bronfenbrenner’s (1977) Ecological Systems Theory. The group discussed and identified elements from each domain that impact the wellbeing of their school community. For example, substance use (micro level), bullying (meso level) and media portrayals (macro level) were identified as key elements that impact wellbeing. PAR students then researched the school community using a simplified model based on Ecological Systems Theory to identify the barriers to and facilitators of wellbeing



in their local context. The students had decided that brief face-to-face interviews were the best way to gather the needed information. They then conducted up to 10 relatively in-depth interviews each (n=47, age range=14-58), using the agreed upon questions. Parents, teachers and other students were interviewed by the PAR students, and data recorded on a template provided by the first author. Interestingly, PAR students overlooked local employers and non-teaching staff who they had previously defined as belonging to the school community. The group compiled this data on butcher paper at the next PAR workshop (see Figure 3.3). It was later combined with focus group data (see below for discussion of focus groups) and delineated into themes of personal functioning and practical concerns (Table 3.3). Barriers to wellbeing at the school identified included lack of self-efficacy around personal ability and understanding school work, issues about the school (e.g., teachers harsh, inability to express self, lack of opportunity), personal care issues (e.g., too much screen time, lack of sleep), and miscellaneous other issues (e.g., money concerns, social isolation. Facilitators to wellbeing included self-efficacy around being able to do well in school and get a job, interpersonal factors (friends, families, etc.), aspects of the school (e.g., well-behaved students, school support), personal issues (e.g., sport and exercise, hobbies), and other miscellaneous factors (e.g., opportunities for new experiences).



*Figure 3.3. Compilation of barriers to and facilitators of wellbeing in the school community interview data (N=47, age range=14-58).*

Table 3.3

*Wellbeing Barriers and Facilitators identified by the School Community (N= 65)*

<b>Barriers to wellbeing</b>	Self-efficacy	<ul style="list-style-type: none"> <li>· others not believing in my ability</li> <li>· not understanding school work</li> </ul>
	Inter-personal	<ul style="list-style-type: none"> <li>· fights with friends and other people</li> <li>· family conflict, parents' divorce</li> <li>· bullying and harassment</li> <li>· feeling uncomfortable speaking in front of people</li> <li>· not being able to see family (due to divorce or being an international student)</li> </ul>
	School Matters	<ul style="list-style-type: none"> <li>· teachers that are harsh and not encouraging</li> <li>· wearing a uniform; not being able to express myself</li> <li>· canteen too expensive, lack of access to culturally relevant food</li> <li>· lack of sports activities</li> <li>· physical education classes</li> <li>· work overload, lots of homework</li> <li>· tests, doing badly at school</li> </ul>
	Personal Care & Regard	<ul style="list-style-type: none"> <li>· poor health, being absent from school</li> <li>· too much 'screen time'</li> <li>· not enough sleep</li> <li>· other students doing drugs</li> <li>· negative body image</li> <li>· overthinking, low self-esteem</li> <li>· stress: deadlines, big tasks, worrying about work, life &amp; family</li> </ul>
	Other	<ul style="list-style-type: none"> <li>· not having enough money</li> <li>· not having enough support or security</li> <li>· too much spare time (boredom)</li> <li>· social isolation due to not having an interest</li> <li>· school holidays</li> <li>· having others challenge your values</li> </ul>
<b>Facilitators to wellbeing</b>	Self-efficacy	<ul style="list-style-type: none"> <li>· being able to get a job</li> <li>· being organised and prepared, having good time management skills</li> <li>· doing well at school - good reports, good grades</li> <li>· being able to have a say about and giving feedback on school affairs</li> </ul>
	Inter-personal	<ul style="list-style-type: none"> <li>· friends, family, relationships</li> <li>· having someone to rely on</li> <li>· gratitude</li> </ul>
	School Matters	<ul style="list-style-type: none"> <li>· school / life balance</li> <li>· well-behaved students</li> <li>· school support, having supportive teachers</li> <li>· having a variety of teaching methods and techniques</li> <li>· having hands on activities in class, breaking up double lessons</li> <li>· engendering respect in the learning environment</li> <li>· having healthy options in the canteen (gluten free, vegetarian etc.)</li> </ul>
	Personal Care & Regard	<ul style="list-style-type: none"> <li>· sport, exercise</li> <li>· good sleep</li> <li>· hobbies, music, dancing</li> </ul>
	Other	<ul style="list-style-type: none"> <li>· having new experiences and knowledge</li> <li>· doing the things you love to do</li> </ul>

Note. Data derived from; interviews of students, teachers, parents (N=47); year 10 student focus group (N=8), year 8 student focus group (N=10).

Two members of the PAR group conducted focus groups in years 8 and 10 to investigate students' motivation to participate in positive education. Final focus group questions were determined with the entire PAR group's input. PAR students and supervising adults found focus group participants to be appropriately behaved and open with their responses. Wellbeing, its barriers and facilitators, were well understood and articulated (see Table 3.3). Hedonic wellbeing rated as a less important skill to have or state to be in when students left school. Focus group students prioritised pragmatic concerns; jobs, career, professional communication and finances featured as most important to know by the time students left school. Being capable of goal setting, managing finances and being independent were also deemed important. Personal functioning themes were mentioned, especially by the older students. Friends, adaptation, communication skills and emotional literacy rated as important assets to have by the end of school.

Regarding motivation for a program such as positive education, focus group students recognised that pedagogy is closely connected with classroom wellbeing and motivation (Shute & Slee, 2016). Flexibility, interesting material, varying teaching and learning methods, doing work in groups and having good teachers were all mentioned as helping to learn in this domain. Students were open to technology in their learning as long as they did not have to read too much on the screen. There were mixed responses as to what level of privacy was acceptable in positive education activities, but students were open to having a choice in how much they had to share with teachers and the class. With no prompting, mindfulness (which a teacher had independently been using with her class as a relaxation technique) was specifically mentioned by a year 10 male participant and reviewed positively as a relaxation aid.

Possible PEIs were trialled by PAR students who critically evaluated them regarding time, interest, and format; raising issues that had not been otherwise considered. For example, PAR students trialled *Smiling Mind*, an Australian mindfulness smartphone app, finding that they liked being able to do it at home in own time. As a 15-year-old male expressed it: 'rather than using your phone to check Facebook, it was just as easy to spend a few minutes doing the Smiling Mind thing'. A 17-year-old female said it was a little annoying to download and raised concerns of

excess phone data usage. Others suggested this could be overcome if smartphones used the school Wi-Fi during the application download, initial setup and the downloading of application data for offline use.

PAR students helped determine an overall communication strategy to convey positive education to the wider student body. They helped clarify the optimal terminology to be used in positive education, specifically what would best be understood and accepted by the wider student body. They also collaborated on what should be the 'essential information' of positive education to be communicated (Table 3.4). These concepts intended to give the school community a common language when discussing wellbeing. In addition, this information summarised the eudaimonic benefits of hedonia, helped clear-up misconceptions of positive education discussed above, and explicitly stated students' involvement with the direction of positive education in the school.

Table 3.4

*Positive Education information deemed 'essential' by PAR students (N=10)*

Positive education fosters and teaches the skills for wellbeing.
Wellbeing is feeling good and functioning well.
∴ Positive education – education for feeling good and functioning well.
There are benefits to wellbeing beyond just being happy: academic and career benefits, better personal relationships and less psychological ill-being.
Positive education is not just being happy or positive all the time. It is about cultivating the <i>skills</i> for happiness, resilience and optimal functioning.
Wellbeing is learnable and can be built.
The framework we use to measure and to think about wellbeing is PERMA +.
PERMA+ is;
P – Positive emotion: Positive emotions, pleasurable experiences, happiness and satisfaction with one's life.
E – Engagement: Taking part in activities and challenges that are motivating and absorbing. Experiencing intense concentration, absorption, and focus.
R – Relationships: Being connected to others, having social contact and social support.
M – Meaning: Having purpose in life, believing that life is worthwhile.
A – Accomplishment: Working towards worthwhile accomplishments and valued goals.
+ "plus": Refers to additional aspects of feeling good and functioning well.
Students are helping the school to find the best positive education curriculum.

*Note.* Data derived from Workshop 4.

PAR students were then able to choose communication roles that they felt comfortable with and that suited their strengths. This included the design of a logo for positive education at their school (see Figure 3.4), the design of a 'wellbeing' page that was printed in every students' school diary the following year (see Figure 3.5) and presenting at whole-school and year-level assemblies. These creative communication roles to appealed to the PAR students and promoted their continued active involvement (Wood & Hendricks, 2017).



*Figure 3.4.* The final positive education logo design.

## POSITIVE EDUCATION

Positive Education fosters and teaches the skills for wellbeing. Wellbeing in this sense means feeling good and functioning well. The framework Blackwood High School uses to develop, think about and measure wellbeing is **PERMA+**.



### P - POSITIVE EMOTION

Feeling and experiencing positive emotions, pleasure, happiness and satisfaction with life.

### E - ENGAGEMENT

Taking part in activities and challenges that are motivating and absorbing. Experiencing intense concentration, engagement and focus.

### R - RELATIONSHIPS

Being connected with others, having social contact and social support.

### M - MEANING

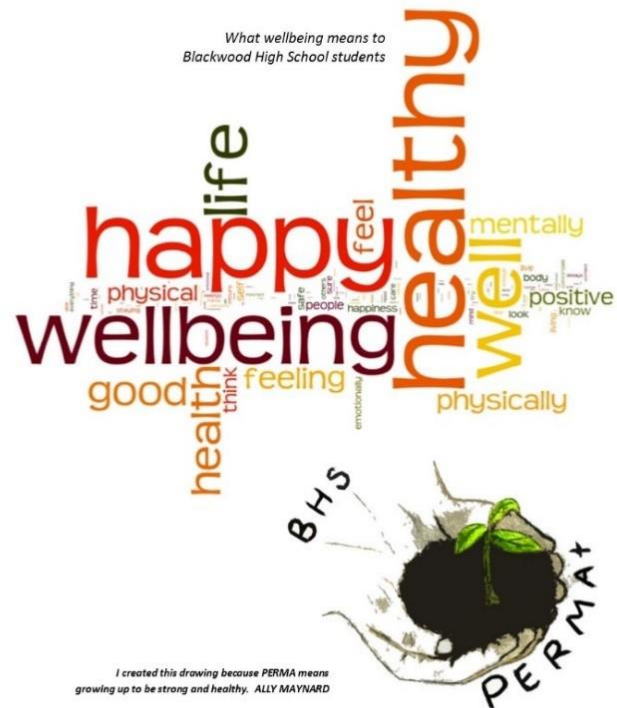
Having purpose in life and believing that life is worthwhile.

### A - ACCOMPLISHMENT

Working towards worthwhile achievement and valued goals.

### + "Plus"

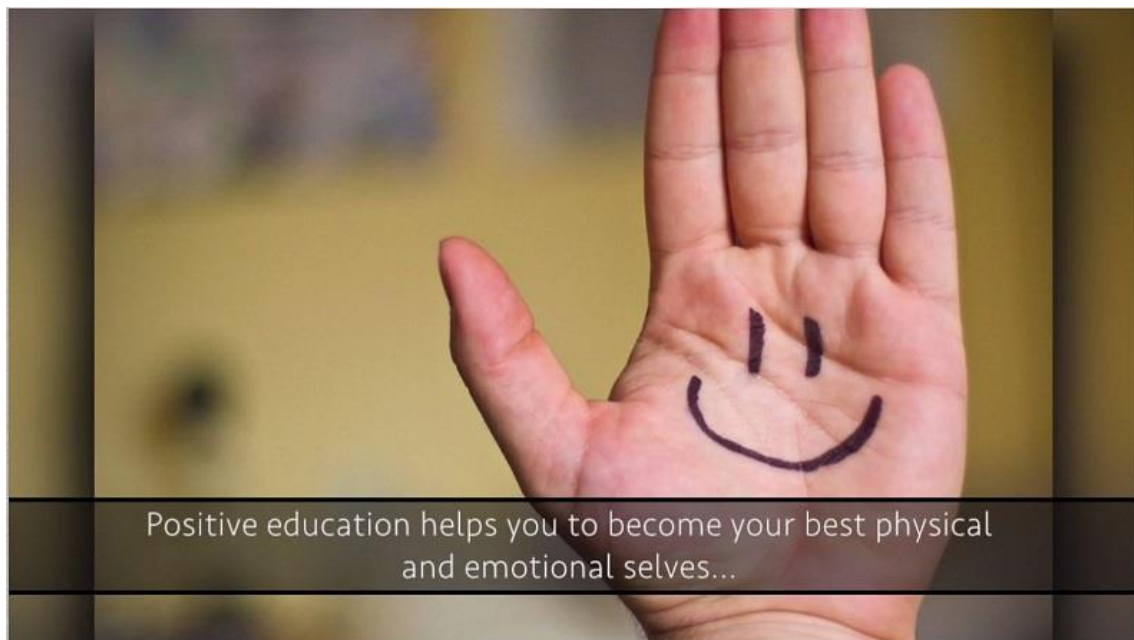
This represents additional aspects of feeling good and functioning well such as exercise, nutrition and sleep.



This page was compiled by the SRC Positive Education Action Research Group

Figure 3.5. The positive education page of 2016 school diary.

A keystone of the students' communication strategy was the production of a short video introducing positive education to others at the school. Students collaborated on the script, font, images and music soundtrack. Each student narrated a number of slides, but unfortunately the final sound quality was poor. It was thus re-recorded by two of the PAR students at a later date. The three-minute video explained: what positive education and wellbeing are; their benefits; how skills for wellbeing can be learned; and explained the domains of PERMA+. The video was considered crucial in the overall student-led communication strategy; it enabled the PAR group to introduce positive education in a medium that resonated with adolescents. The video (Figure 3.6) was used in PAR students' assembly presentations, put on the school's website where parents can view it ([www.bhs.sa.edu.au/curriculum/wellbeing/videos](http://www.bhs.sa.edu.au/curriculum/wellbeing/videos)) and was used in the introductory session of a positive education pilot program the following year (Halliday, Kern, Garrett, & Turnbull, 2017b).



*Figure 3.6.* A screenshot of the positive education video produced by PAR students (N=10).

### **PAR process evaluation**

The PAR process was examined using mixed methods to determine if there were any developmental benefits to PAR group participants at the personal level. A comparison group, who conducted no stakeholder action research, was used to examine if any school-wide effects might explain any changes.

#### ***Quantitative data***

Demographic data (age) and outcome measures were analysed at baseline using independent samples t-tests. No difference between the PAR and control groups was found in age ( $t(17)=-.639, p=.531$ ), nor in any outcome measures between groups at baseline; Engagement ( $t(17)=-.718, p=.483$ ), Perseverance ( $t(17)=-1.239, p=.232$ ), Optimism ( $t(17)=.363, p=.721$ ), Connectedness ( $t(17)=.278, p=.784$ ), Happiness ( $t(17)=.965, p=.348$ ), self-efficacy (GSE;  $t(17)=-.524, p=.607$ ), social and emotional assets (SEARS-A-SF;  $t(17)=-.388, p=.703$ ).

Reliable Change Indices were calculated using the formula of Evans et al. (1998) to determine if there was a genuine change in scores between T1 and T2 as opposed to changes due to measurement error. A clear pattern can be seen; students in the PAR group showed some reliable changes in the desired direction, particularly in Engagement and General Self-Efficacy, while students in the comparison group



recorded some reliable changes in an undesirable direction (see Table 3.5). Out of a possible 70 self-reported measures, the comparison group recorded eight reliable changes in the desired direction (11.43%). Out of a possible 63 self-reported measures, the comparison group recorded one reliable change in the desired direction (1.59%). Patterns were similar for changes in an un-desired direction, with the PAR group reporting one reliable change (1.43%) and the comparison group reporting nine reliable changes (14.29%). The comparison group showed declining mental health and wellbeing over the course of the school year consistent with adolescent samples of other studies (e.g., Boniwell et al., 2016; Vella-Brodrick et al., 2014), likely reflecting increasing demands of adolescence and senior level school work. The PAR group did not show this pattern.

Table 3.5

*Reliable changes for PAR participants and comparison group*

	Sex	Age	E	P	O	C	H	GSE	SEARS	SEARS-T
PAR group	F	15	0.5	0	0.25	0	0.5	-0.1	1	-1
	F	15	-0.25	0.5	0.25	-0.25	-0.25	0.2	-3	0
	F	16	0	-1	0	0.75	-0.25	0.1	-2	-4
	F	14	0.25	0.25	0	0.75	-0.25	-0.1	0	1
	F	14	0.25	0	0	0	0.25	0.2	1	-2
	M	15	0.25	0	-0.25	0.25	-1.25	-0.5	-3	-3
	M	15	-0.5	-0.25	0.25	-0.5	0.25	0.2	3	0
	M	14	-2.25	-0.5	-1	-1.5	-0.25	-0.7	-2	-3
	M	14	-1.5	-0.5	1.25	0.25	0.25	0.2	1	-1
	M	17	-1	0	0	-0.25	0	0	4	-4
Comparison group	M	17	0	0.75	0.75	-0.25	0.25	0.2	1	Not measured
	F	14	0.25	0.25	0.5	1	-0.75	0.4	7	Not measured
	F	14	0.25	0.25	1.25	1	2	0.7	12	Not measured
	F	16	-0.25	0.25	-0.25	-0.75	-0.5	-0.58	6	Not measured
	M	16	-0.5	1	-0.25	-0.75	0	0	3	Not measured
	M	14	0	0	0.5	0	0.5	0.3	1	Not measured
	F	16	0.25	0.75	-0.5	-0.25	0	-0.1	-2	Not measured
	M	14	0.75	0.25	-0.25	0	-0.25	0.5	0	Not measured
	F	16	-0.75	-0.25	-0.75	0.25	-0.75	-0.1	-3	Not measured

Note: Red – reliable change in undesired direction, green – reliable change in desired direction.

Note. E- Engagement, P – Perseverance, O – Optimism, C – Connectedness, H – Happiness, GSE – General Self-Efficacy, SEARS – Social Emotional Assets and Resilience, SEARS-T – teacher rated Social Emotional Assets and Resilience.

Other quantitative data were collected from the PAR group and included questions on general satisfaction, competency and autonomy. An improvement of communication skills had the highest agreement, with the majority of students also reporting improved confidence, research skills and autonomy (see Table 3.6).

Table 3.6

*PAR group (N=10) evaluative data*

Six students reported that PAR had helped them gain new confidence.
Eight students that PAR made them feel like they were having a say in school affairs.
Two students reported that PAR made them a better student, with eight reporting 'neutral'.
Nine students reported improved communication skills with one reporting neutral.
Six students reported increased research skills.
Six students reported that PAR allowed them to feel more in control of what happens at school.
Four students reported PAR helping their ability to problem solve.
Four students reported PAR helping them to think critically.

Note. Reported as 'moderately true' or 'exactly true' on the 5-point Likert scale response.

### ***Qualitative data***

Qualitative data were also collected in the questionnaire and in interviews. The qualitative data were useful in illuminating and contextualising our quantitative findings. We consider the results within the SDT framework. Many responses related to personal and developmental competencies gained, in particular communication and research skills. For example, comments included:

- 'The best thing I got out of PAR was the skills (sic.) to approach survey participants and explain the purpose in a formal and concise manner. Overall, my communication skills have been improved.' Female, aged 15.
- '(PAR) also helped me work on communication with my peers and, like, oratory skills. I had a speech in front of the whole school and stuff which is daunting, but it challenged me.' Female, aged 17.
- 'I now have better communication with people of different year levels.' Male, aged 17.

Several participants mentioned autonomy, empowerment or agency:

- 'I think (involving students) is a very good idea because they feel like they're being involved and that they matter. It's very important for students to feel

like that they have a voice and that they matter in the school, it's really important.' Female, aged 17.

- 'I felt more control in my school because I'm one of the people whose introducing positive education to school, therefore making a difference to the school.' Female, aged 15.
- 'I don't think it was giving me too big of a say but my ideas were listened to.' Male, aged 14.
- '(PAR) made me feel that the school wanted the students' input on decision making.' Male, aged 17.
- 'We had a say, an opinion and a voice.' Male, aged 14.

And others referred to relatedness, school connection and forging new networks:

- 'I was able to help the school.' Male, aged 15.
- 'I think friendships between student researchers remains neutral however, we became familiar with each other as we worked together to achieve goals.' Female, aged 15.
- 'I got to be involved in the school.' Male, aged 14.
- '(PAR) helped you to realise what (the other students) thought, and whether you shared an opinion and then you had a closer bond, and then you'd get talking, so yeah definitely bringing students together.' Female, aged 17.

There was critical feedback regarding letting everyone involved in the PAR group have a say during workshops and defining students' roles earlier in the process. While students enjoyed learning about PERMA+ as a framework of wellbeing, they did not necessarily find Bronfenbrenner's ecological framework helpful. Predominantly PAR students thought conducting stakeholder research gave them more autonomy and control in their school environment. One interviewed student stated we should 'introduce positive education to as many schools as possible'.

### 3.5 Discussion

This study investigated the value of involving students in a positive education strategy using a framework of participatory action research. We consider patterns of effects and discrepancies in the data, drawing on quantitative and qualitative data. We found using student-led PAR helped the school to plan positive: that would be relevant to students; that students would believe was worthwhile; completed in a way that was developmentally beneficial to the PAR students. The process was pragmatically small scale to fit within the school's resources, timetable and calendar. Despite these real-world limitations, the PAR group produced important outcomes for the understanding and for the communication of positive education, having direct impacts on intervention compatibility and buy-in to the concept.

Student involvement significantly enriched the quality and depth of findings, as youth have a more intimate knowledge of the adolescent world than adults (Livingstone et al., 2014). PAR students, for example, did not resonate with the concept of Meaning in the PERMA model as adults do, instead emphasising personal connections and interaction. This is consistent with findings of Kern et al. (2015), who found items reflecting Meaning loading on the Relationships factor in their quantitative analysis of the PERMA model with adolescents. As the authors suggest, this may be due to adolescents' tendency to gain meaning from their associations with others, underlining the importance of adolescents' social functioning in their overall wellbeing. Shute and Slee (2016) suggest there is value in increased partnership with students in the development and evaluation of mental health and wellbeing programs, and this is underlined by the deeper understanding brought about in the present study.

#### **Developmental benefits**

While we cannot make direct causal attributions, evidence presented here suggests that student involvement is developmentally beneficial, appearing to contribute to important youth development outcomes in the young people involved (Mitra, 2004). Participation in stakeholder research corresponded to gains in personal competency (engagement, self-efficacy, research and communication skills), autonomy and school-specific relatedness. Students reported satisfaction in being

involved in school affairs, and being able to help the school, especially in an area that dealt with student mental health and wellbeing. The comparison group showed no evidence of these developmental benefits being a school-wide effect. Further, while the control group showed some decline in wellbeing measures through the year as other studies have also found, the PAR group did not show these declines. These findings show student-led PAR is consistent with the objectives of positive education: to build and foster wellbeing.

### **Buy-in and ownership**

Evaluation showed PAR students enjoyed learning about wellbeing and having the ability to help it in their school. They advocated positive education's wide dissemination, indicating ownership and initial buy-in. Student-led communication of positive education by the PAR group was considered crucial to aid ownership of and buy-in to subsequent positive education among the wider student body; this is examined in a subsequent study (see Halliday et al., 2017b). PAR students showed their ownership of positive education by communicating the relatively abstract notions of wellbeing and positive education to the wider student body in the 'student voice'. The quality of research findings confirm the maturity, intellect, and commitment to participate of high school students (Livingstone et al., 2014). Disagreements, conflict and unfairly distributed workloads reported as characteristics of stakeholder research (Kidd & Kral, 2005) did not feature with the students in this PAR group. There was some loss of motivation and engagement in the early theoretical workshops, but this was overcome with better defined roles and more active and engaging activities such as producing the video for assembly and online presentation.

### **Reflections on the process**

Adults had to be mindful not to step beyond their administrative roles, as was sometimes the case. For example, when organizing the logistics pertaining to the assembly presentations, the adults had to refrain from writing presentation material, even when students asked for help.

The level of participation as defined by Hart's (1992) model, was ambiguous at times. As Kirby and Gibbs (2006) discuss, participation shifted within projects and within tasks. At the conclusion of the study, authors reflected on students' actual participation, and deemed the project to be situated closer to Rung 5 on Hart's ladder. While students' views were deeply considered in decision making, the final decisions remained with the school; it having the ultimate 'duty of care' concerning the implementation of positive education. Students were sincere consultants whose opinions were treated seriously and valued. They were explicitly involved in the process as experts on adolescent wellbeing. While being unable to satisfy the conditions needed to reach Rung 6, we feel students were recognized as citizens of their school community and participated at their highest possible level. Hart (2008) himself discusses the importance of the need for any form of involvement of children in an issue that affects them;

*"When people recognise the rights of others to have a voice and involve them, then this, in my mind, is morally superior to children being 'in-charge'." (pg.24)*

### **Limitations and future direction**

The findings of this study should be interpreted in the context of its limitations. First, in order to be pragmatic, we dealt with a much shorter timeframe than other research in the area. Flicker (2008) highlights participatory research requires substantial time and human resource investment. The current study did the best it could within the real-world constraints of the school. A lack of time and human resources involved in the study led to a number of further limitations. The method of collecting data from student practitioners was less than ideal; the author who facilitated workshops was minimally involved in the administration of questionnaires from the PAR group. As noted above, working with the constraints of the school calendar, some PAR activities that involved four of the ten PAR students (two students presenting positive education to their peers at assemblies and two conducting focus groups), were conducted after the final measures were taken at T2. This may have resulted in any benefit to those participants stemming directly from these activities not being included in the evaluative data we collected, therefore PAR

having less impact in this study's measures than it might have actually had. Had more time been available, subsequent cycles of investigation by students might have been facilitated. A deeper examination of data may have been carried out, for example, how different groups within the school community are impacted by identified barriers to wellbeing.

A further limitation has been the preparation of this paper not being in sufficient time to be fed back to the all students in the PAR group. Although the framework used here aimed to be timely and economically sustainable, using PAR in the implementation of positive education does come with time and human resource investment. Those interested in conducting PAR with students should consider investing more time to conduct PAR activities.

The sample was also small and so results are not intended to be generalizable. Moreover, there may be a selection bias for the PAR students, being drawn from the SRC group of that year. However, Carpenter and Suto (2008) allow deliberate selection of specific individuals, events and settings due to the crucial information they can provide, and it was at the school's request that PAR volunteers were drawn from the SRC group.

## **Conclusion**

Finding out what young people need rather than just telling them, doing research 'with youth' rather than 'on youth', is vital for improving effectiveness and efficiency of interventions for young people (Boyle, 2012). Involving students through their participation in action research is a promising approach for an accessible, evidence-based, and developmentally beneficial approach to better understand student wellbeing. Education has shifted from a teacher-centred distribution of information towards student-led inquiry methods (Shute & Slee, 2016). By involving students in PAR, a school can show its students that they are considered key stakeholders in positive education, their own wellbeing, and have the capacity to contribute to their own wellbeing.

We found student involvement has value; PAR detailed in this case study provided a platform for the success of positive education at the school. It helped the school to better understand its students' wellbeing, aiding the relevance and



appropriateness of a preliminary positive education curriculum at the school. It also fostered student ownership of and buy-in to it (see Halliday et al., 2017b). Student-led PAR: allowed researchers to ensure the project's theoretical base and methodological durability; allowed teachers, parents and other students to have systematic input into the positive education initiative; and has done so in a way that indicated developmental benefits to those who conducted it.



## 4 Chapter 4 – Study 2

Study one supported the notion that student involvement can support intervention fit and may foster buy-in, underlining what is needed for program effectiveness. Study two examined these (intervention fit and recipient buy-in), and other considerations for the implementation of positive education, further, in a systematic fashion. An evidence-informed Positive Education Pilot Program was developed, considering the student input derived from study one. Implementation science literature was used to devise a model to study factors influential to positive education in practice, and by extension thought to be influential to positive education outcomes.

I note that while implementation science involves the study of the uptake *evidence-based practice* into routine delivery (Eccles & Mittman, 2006), we used the area's research to study factors of positive education in practice using an *evidence-informed* pilot program. Evidence-based practices are derived from research designs such as the randomised control trial, whereas evidence-informed practices are informed by the best available research evidence, but incorporate considerations of context such as the needs, values, and preferences of individuals providing or receiving the practice (Bowen & Zwi, 2005; Dodd & Savage, 2016).

### Statement of Authorship

Title of Paper	Understanding Factors Affecting Positive Education in Practice: An Australian Case Study
Publication Status	<input type="checkbox"/> Published <input type="checkbox"/> Accepted for Publication <input checked="" type="checkbox"/> Submitted for Publication <input type="checkbox"/> Unpublished and Unsubmitted work written in manuscript style

### Principal Author

Name of Principal Author (Candidate)	Amber Halliday
Contribution to the Paper	Collected data, interpreted data, drafted and submitted manuscript, made revisions and acted as corresponding author.
Overall percentage (%)	85%

Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
Signature		Date	19/1/19

### Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

- i. the candidate's stated contribution to the publication is accurate (as detailed above);
- ii. permission is granted for the candidate to include the publication in the thesis; and
- iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Deborah Turnbull		
Contribution to the Paper	Supervised in development of work, refining direction of methodology employed in the research. Provided editorial input by commenting and refining material presented in drafts.		
Signature		Date	21/1/19

Name of Co-Author	Margaret Kern		
Contribution to the Paper	Supervised in development of work, refining direction of methodology employed in the research. Provided editorial input by commenting and refining material presented in drafts.		
Signature		Date	20/1/19

Name of Co-Author	David Garrett		
Contribution to the Paper	Consulted on and supervised collection of data.		
Signature		Date	21/1/19

The text, figures and tables presented in this chapter appear the same as the submitted paper, except for minor formatting changes such as renumbering for consistency within the thesis. Materials that were included as online resources with the journal article are presented in the appendices of the thesis. References and acknowledgments have been included in those of the thesis.



## **Understanding Factors Affecting Positive Education in Practice: An Australian Case Study**

### **4.1 Abstract**

Positive education applies positive psychology interventions (PPIs) within educational settings. Increasing evidence suggests that PPIs can help increase wellbeing and reduce depressive symptoms in general and clinical populations. However, there is less evidence that PPIs are similarly effective within complex school environments. The study aimed to 1) examine the effectiveness of a positive education pilot program (PEPP) delivered within an Australian public high school, and 2) use an implementation science framework to explore factors impacting the planning, delivery, practice and success of program activities. The study used a non-randomized wait-list design (n=143), and provider (teacher), recipient (student), intervention (PEPP), organizational (school) and contextual factors were systematically explored through a mixed methods approach. Findings suggest the PEPP was not related to increases in wellbeing or resilience but may have buffered students from declining mental health during the school year. Recipient outlook, organizational support, stakeholder input, and provider enthusiasm and understanding were all thought to impact program outcomes. By exploring the practice of a positive education intervention from an implementation perspective, challenges and opportunities of positive education in the real world can be identified.

Keywords: adolescents, positive education, positive psychology interventions, student wellbeing, implementation science

## 4.2 Introduction

Positive education is an approach to fostering wellbeing in students. It applies evidence-informed interventions and practices predominantly from positive psychology, but also from other areas such as social and emotional learning (SEL) and prevention, in order to foster resilience, strengths, capabilities, and other non-cognitive skills in students (Seligman et al., 2009; Slemp et al., 2017). A positive approach to education is nothing new (e.g., Kern, Park, Peterson, & Romer, 2017; Kristjánsson, 2012), but is increasingly being considered and applied in schools around the world (e.g., International Positive Education Network, 2017; Slemp et al., 2017). This interest is due, in part, to growing concerns over the prevalence of mental illness, including depression, anxiety, and suicide. Epidemiological evidence reveals many lifetime mental disorders begin in childhood or adolescence (Kessler & Bromet, 2013), and prevention or early intervention in adolescence may help to prevent adult psychological ill-being, or at least reduce its severity and duration (McGorry et al., 2011).

The psychological literature suggests that positive psychology interventions (PPIs) can help improve wellbeing and decrease depressive symptoms in general and clinical adult populations (Bolier et al., 2013; Sin & Lyubomirsky, 2009). Positive education applies various PPIs within schools, through programs and curriculum. However, while SEL interventions and school-based prevention initiatives have a well-established evidence base (e.g., Durlak et al., 2011; Nehmy & Wade, 2014), similar evidence for the application of PPIs within schools is lacking. Contextual factors are often overlooked (Ciarrochi et al., 2016), and there is a dearth of best practice implementation frameworks to guide the rapid growth in the field (Conoley et al., 2014). To ensure that positive education provides benefit to students and schools, is resource efficient, and does not create unintended harms, there is a need for systematic investigation, not only into positive education interventions, but into their practice or implementation as they occur 'on the ground' in schools. The current study aims to evaluate the impact of one such evidence-informed positive education intervention on student mental health and investigates factors impacting its practice.



## **Positive Education Programs**

Positive education provides an umbrella for multiple approaches to promote student wellbeing within educational settings. It is characterised by its inclusion of the concepts and scholarship of positive psychology (PP), but it may also include interventions from social and emotional learning (SEL) or prevention for example. Often techniques and strategies are combined to form a comprehensive program such as the Strath Haven Positive Psychology Curriculum which focuses on developing character strengths, relationships, meaning, and positive emotional experience (Seligman et al., 2009). Smiling Mind is another positive education program which provides mindfulness audio for individual students or teacher facilitated groups (Martino & Tutton, 2012). Shorter, stand-alone, evidence informed practices such as ‘three good things’ (Seligman et al., 2009) also reside under the umbrella of positive education.

## **An Implementation Perspective**

There is growing recognition for the need to consider factors that make positive education programs more or less successful, as well as the mechanisms involved (Slemp et al., 2017). Implementation science is an emerging field that explores and explains what makes interventions work in real world contexts, addressing gaps between findings in the lab and actual outcomes in the real world (Kelly, 2012a). Interventions and programs can be designed, tested, and have empirical support under controlled conditions, but often encounter problems when tested in the real world. These problems can arise from a scientific failure to anticipate and take into account problems encountered in practice (Kelly, 2012a). Challenges of positive education in practice can limit the benefits that participants might otherwise derive; implementation matters to outcomes (Durlak & DuPre, 2008; Durlak et al., 2011). For instance, a review of more than 500 studies demonstrated that effect sizes are at least two to three times higher when programs are “carefully implemented” versus less careful applications (Durlak & DuPre, 2008, p. 340). A meta-analysis of school-based social and emotional learning (SEL) programs involving more than 200 studies and 250,000 students found that programs implemented with higher quality resulted

in larger reductions in emotional distress than programs implemented with lower quality (Durlak et al., 2011).

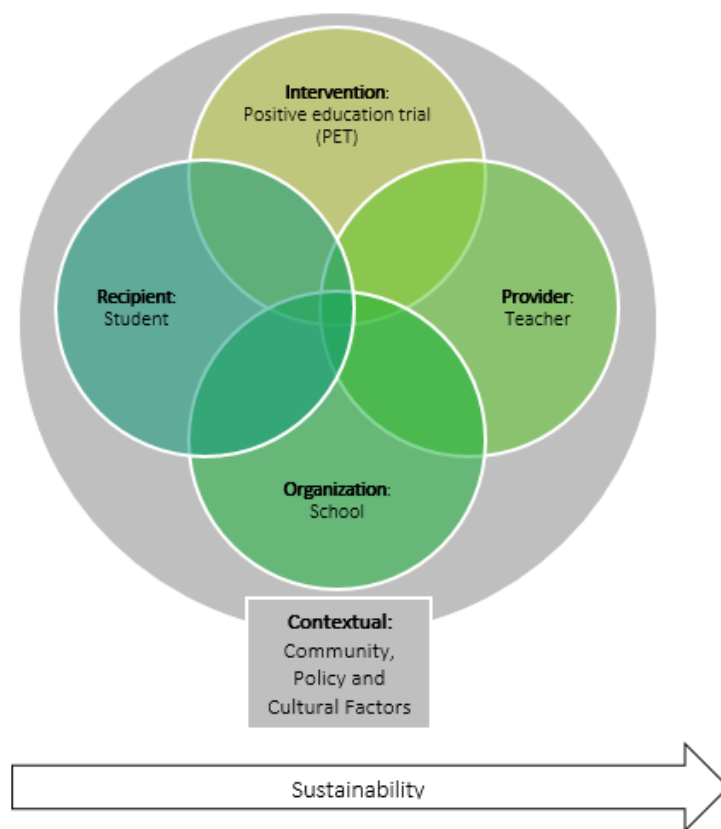
Evaluation of how a program is practiced within schools can help us to learn from non-significant results and to be more responsive to the practical challenges of complex educational contexts (Greene, 2015). Clinical research typically focuses on the effects of an evidence-based practice (EBP) on a particular outcome variable, whereas implementation studies typically focus on how EBPs are applied. Bauer et al. (2015) describe a study which evaluates the effectiveness of an intervention, while simultaneously observing process such as planning, delivery and practice. This type of research not only explores what works or what does not, but also why, for whom, under what conditions, and what supports and hinders achieving the intended outcomes (Kelly & Perkins, 2012). By identifying barriers and enablers, it can inform which aspects of a program are feasible, and can inform future implementation efforts (Bauer et al., 2015).

This approach has been used for diverse scenarios such as adopting a high school program for students with autism spectrum disorder (e.g., Odom, Duda, Kucharczyk, Cox, & Stabel, 2014), and the implementation of strategies to prevent sports injuries (e.g., Donaldson & Finch, 2013). It has been used with various SEL programs (e.g., Durlak et al., 2011), but not with positive education programs. Here, an important question is raised; what is needed to make positive education more effective?

### **Factors Impacting Implementation: An Organizing Framework.**

The impact of an intervention in a complex and dynamic school system is influenced by the interaction of numerous factors (Durlak, 1998), which are often overlooked in program dissemination in schools (Domitrovich et al., 2008). An implementation science approach enables the identification of factors that influence intervention outcomes. Building upon extant models (e.g. Domitrovich et al., 2008; Durlak & DuPre, 2008; Fixsen, Naoom, Blase, Friedman, et al., 2005), Figure 4.1 provides an organizing framework of five categories of determinants that impact implementation success within a school context: provider, recipient, intervention, organization, and contextual. Sustainability refers to the capacity of a system to

continue and improve the intervention. These implementation categories and the factors of which they are comprised (discussed below), are relevant for many school-based mental health initiatives, but have yet to be examined with positive education programs. The relative importance of each implementation factor and their interaction with each other is unknown, and most likely varies across time and settings, but provide areas to consider in the high-quality implementation of a program (Durlak, 2013). These factors unfold together over time in ways that make the program more or less sustainable.



*Figure 4.1.* Organizing framework illustrating factors impacting the success of the implementation of positive education.

**Provider factors.** Providers refer to those delivering the intervention. In the current study, teachers were the primary providers of the positive education intervention. A provider’s genuine insight and understanding gained through training is considered vital in adolescent mental health (Proctor, 2014). For example, Seligman et al. (2009) reported on how the effectiveness of the Penn Resiliency Program – a

mental health intervention used in schools – appears to be partially related to the extent of training and supervision the provider had received, whether they were teachers, counsellors, psychologists, social workers or graduate students (Gillham, Brunwasser, & Freres, 2008).

Frameworks that do exist for delivering positive education (e.g. Norrish et al., 2013) emphasize staff training as a starting point; however, provider training does not necessarily lead to program fidelity i.e., implementation as intended (e.g. Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). A variety of other provider factors also matter, including the perceived need for/relevance of the intervention, perceived benefit/effectiveness of intervention, motivation to implement the intervention, self-efficacy, skill and experience, personal characteristics and attributes, understanding of the theory underlying the intervention, understanding of how and why it should be implemented, the intervention's intuitive appeal to the provider, and the involvement of external paraprofessionals in implementation (Durlak & DuPre, 2008; Fixsen, Naoom, Blase, Friedman, et al., 2005; Pearson et al., 2015; Samdal & Rowling, 2011).

**Recipient factors.** Recipients refer to those whom the intervention is aimed at. In the current study, the recipients were secondary school students in an Australian public school. Influential recipient factors include the attitudes of recipients (perceived need, motivation and buy-in), self-efficacy, adherence, believing the intervention can bring about change, knowing the benefits of the intervention, the extent to which recipients' contributions are sought and valued, support from significant others, and resistance to the intervention (Aarons et al., 2012; Damschroder et al., 2009; Domitrovich et al., 2008; Layous et al., 2013; Lyubomirsky et al., 2011; Pearson et al., 2015; Samdal & Rowling, 2011; Vella-Brodrick, 2013).

Vella-Brodrick (2013) discusses participant characteristics such as their motivation, personality, age, socio-economic status and their ability to evoke mental imagery as being important factors in the efficacy of PPIs used with adults, while Dane and Schneider (1998) identify participant responsiveness as an important component for prevention programs. Student resistance and student buy-in also may impact on the program (Slemp et al., 2017), although recipient factors in school settings have not yet received a great deal of research attention.

**Intervention factors.** Intervention factors refer to characteristics of the intervention itself, in this case a positive education pilot program (PEPP). These can include its compatibility with recipients, its fit with the organization's mission, the fidelity in its implementation vs. the extent to which it can be adapted, the mode of delivery, 'dosage' effects, timing within the school calendar, and clarity of outcome measures (Damschroder et al., 2009; Domitrovich et al., 2008; Durlak & DuPre, 2008; Owens et al., 2014; Pearson et al., 2015). The importance of 'fitting' interventions to recipients, or participant-program compatibility, has been recognized in positive psychology (e.g. Lyubomirsky & Layous, 2013; Schueller, 2011; Vella-Brodrick, 2013), but less is known about positive education's compatibility with students in a school environment. Further, an intervention's fidelity (i.e. the extent to which an intervention is carried out as intended) and adaptation (i.e. the extent to which an intervention is modified to fit provider and recipient preferences, organizational practices, and socio-cultural needs and expectations) both may affect outcomes, despite seeming incongruous. Durlak and DuPre (2008, p. 341) discuss this in terms of "finding the right mix" (p. 341), indicating that even as fidelity matters, there is always some degree of adaptation needed. This may be particularly true when applying activities developed within a psychological laboratory to the real-world context of a school.

Although dosage and frequency of an intervention also matter, little is known about the ideal amounts needed for benefit. Dosage may be a potential non-linear relationship. For example, a study in which participants were asked to count their blessings each day found evidence of a saturation point, such that benefit occurred up to a certain point, but then had diminished benefit or even was harmful (Sheldon & Lyubomirsky, 2004). Further, the frequency and dosage needed may vary by the individual.

**Organizational factors.** Organizational factors refer to factors within the system of delivery and support of an intervention. Organizational factors include whether or not there are individuals with the motivation and capacity to drive an intervention forward, the stability of personnel, organizational readiness for change, the availability of resources within the organization to implement the intervention, the nature of social relationships (e.g., collaboration, communication, technical

assistance), organizational norms, recipient and provider incentive/reward, the alignment of the intervention with organizational goals, and competing interests of stakeholders within the organization (Damschroder et al., 2009; Domitrovich et al., 2008; Durlak & DuPre, 2008; Fixsen, Naoom, Blase, Friedman, et al., 2005; Forman et al., 2008). The resources a school has to devote to positive education is critical. Positive education programs have been adopted disproportionately by higher resourced schools (O'Connor & Cameron, 2017) and the perceived prohibitive cost of positive education is a major challenge for the area (White, 2016). Many PPIs require little to no cost, such that schools might choose the cheapest activities, rather than the most effective ones.

**Contextual factors.** At the macro level, characteristics of the community (i.e. socio-cultural norms), funding, systemic or political support (or lack thereof), relevant policies, and considerations of the student's home environment can impact program success (Damschroder et al., 2009; Domitrovich et al., 2008; Durlak & DuPre, 2008; Fixsen, Naoom, Blase, Friedman, et al., 2005; Vella-Brodrick, 2013). While a school has less control over such factors, numerous studies point to the importance of identifying the impacts and constraints that such factors impose on the intervention (e.g., CASEL; Kern, Park, et al., 2017).

**Sustainability.** From a program standpoint, part of the success of a program is in its sustainability – both in terms of the continuation of activities and behaviors beyond the end of the explicit intervention period, and in the ongoing provision of the intervention itself. Provider, recipient, intervention, organizational, and contextual factors dynamically intersect over time, in ways that make the intervention more or less sustainable. For example, the provision of financial resources is vital to sustaining a program (Forman et al., 2008). Teachers' "unambiguous" buy-in and self-determination has been identified as influential to school-based program sustainability (Fixsen, Naoom, Blase, Friedman, et al., 2005, p. 9, p. 9). A program's survival through shifts in leadership and staff turnover are also important (Forman et al., 2008; Slep et al., 2017). And Shediak-Rizkallah and Bone (1998) point to how shared decision making and community participation predict program sustainability.

Consideration of sustainability requires long term follow up, focusing not only on potential impacts of a program, but also what aspects of the intervention are continued, terminated, modified, and adapted and the experiences, benefits, and costs. While an investigation of sustainability is beyond the scope of the current study, the process followed here aims to provide a baseline description that will allow sustainability to be tested in the future.

### **The Current Study**

A positive education pilot program (PEPP) was implemented in grade 9 at an Australian Government high school (i.e., publicly funded school; hereafter referred to as 'the school') during the 2016 school year. The study aims to evaluate the PEPP, as well as to explore its practice in order to facilitate subsequent implementation efforts. The current study's evaluation focuses especially on recipient factors, as these have received less attention in both positive education and implementation research (Durlak & DuPre, 2008).

## **4.3 Method**

### **Participants**

The Positive Education Pilot Program (PEPP) was conducted with grade 9 students aged between 13 and 16 years (baseline;  $M = 14.04$  years,  $SD = 0.28$ , 40.5% female). At the time of the study, the school's Index of Community Socio-Educational Advantage (ICSEA)<sup>3</sup> was 1068, showing that it was slightly above the Australian average. While all students in grade 9 ( $n=180$ ) participated in the PEPP as part of their usual school activity, consent was sought for measurement, and only those students with consent completed measurement and evaluative activities (79.4% response rate;  $N=143$ ). Participation at each time point varied (see Table 4.1). Grade nine was divided into two groups (detailed below), analyses revealed no significant

---

<sup>3</sup> ICSEA provides an indication of the level of educational advantage of the school's student population relative to those of other schools using the geographical location of the school, the proportion of indigenous students catered for, and the occupation and level of education of students' parents'. In 2016, scores ranged from 125 for a school in remote Arnhem Land, to 1308 for an independent inner-city Sydney school. The Australian average is 1000 (Australian Curriculum Assessment and Reporting Authority, 2012).

statistical differences between groups on age ( $t(114)=.018, p=.986$ ), or gender ( $\chi^2(1)=.136, p=.712$ ).

Table 4.1  
*Study Design Overview*

	End of Term 1	Term 2	End of Term 2	Term 3	End of Term 3
Group 1	T1 measure $n = 69$	PEPP	T2 measure $n = 70$		T3 measure $n = 59$
Group 2	T1 measure $n = 47$		T2 measure $n = 73$	PEPP	T3 measure $n = 55$

Separate consent was gained from students, teachers and other participants (e.g., parents) for additional evaluative activities (e.g., focus groups). All procedures were approved by the University of Adelaide Human Research Ethics Subcommittee (reference number 16/02) and South Australia's Department of Education and Child Development (DECD) Research Unit (reference number CS/16/00067-1.1).

### **Teacher training**

Before the PEPP was delivered, a brief training program was developed for grade 9 pastoral care teachers ( $N=8$ , 62.5% female; age: 25-64 years, teaching experience: 1-32 years). The first author developed the content, in collaboration with the school's deputy principal (DP), who had undergone extensive training in positive education. Background information on positive education, a summary of scientific evidence for the benefits of positive emotion, and links to educational videos were distributed ahead of three face-to-face sessions, each lasting two hours. These sessions included a review of distributed material, a summary of wellbeing and ill-being data already collected at the school (Halliday, 2014), a discussion on the prevalence of mental ill-being and suicide in Australia, a discussion of class norms at the school, possible adverse events, an opportunity to try several wellbeing activities, and an opportunity to collaborate on proposed PEPP lesson plans. Learning outcomes including program and personal efficacy, an understanding of the PEPP's rationale, and attitude toward the PEPP, were assessed at the conclusion of training (see Implementation Evaluation).



### **The Positive Education Pilot Program**

The PEPP program was completed in extended pastoral care time ('care group') once a week for one school term (9 sessions) and delivered by pastoral care group teachers ('care group teachers'). Content was informed by existing practices and frameworks in the school, previous data collection at the school (Halliday, 2014), action research completed by students the previous year (Halliday, Kern, Garrett, & Turnbull, 2017a), content developed during the staff training workshops, and guidance from key leadership personnel.

Prior to the study, the school had adopted a model of positive education that included practices from positive psychology, social and emotional learning, prevention, and health promotion. The school defined wellbeing as the ability for an individual to feel good and function well (Huppert & So, 2013). Activities included in the PEPP were consistent with this, in that they were derived from positive psychology and prevention, and they emphasize the conditions and behaviors that help people to feel good and function well. By using intervention from positive psychology and prevention, the PEPP was considered an 'integrated model' of universal mental health intervention, providing a greater theoretical breadth and blending the strengths of both the positive psychology and prevention disciplines (Cook et al., 2015, p. 168).

The program began and ended with sessions focused on positive activities, which were intended to foster positive affect, gratitude, meaning and optimism. Participants learned about and participated in several PPIs, including 'Three Good Things' (Seligman et al., 2009), 'Gratitude Letter' (Seligman et al., 2005), 'Meaning Through Photography' (Steger et al., 2013), 'Counting Kindness' (Otake et al., 2006), and 'Best Possible Selves' (Layous et al., 2013). Chosen activities had a well-established evidence base in the positive psychology literature and have been used in other positive education programs. The five sessions in the middle used a freely available, online depression and anxiety prevention program ('MoodGYM'; Australian National University, 2014). MoodGYM is a scientifically validated tool that allows participants to practice navigating their thinking styles and emotional responses across a range of situations (see Christensen et al., 2011). It is appropriate for use

with young people within a class or as a group exercise (Australian National University, 2014). Based on suggestions by the school, two Student Representative Council (SRC) students trialled MoodGYM. The first author developed posters on the types of 'warpy thinking' to complement areas where these students reported difficulty. In addition, some positive activities (e.g. three good things) continued during sessions devoted to MoodGYM. MoodGYM was chosen as it had a robust evidence base, succinct timeline, is self-paced and relatively private, and does not require special training for providers (for summary of advantages see Caelear, Christensen, Mackinnon, Griffiths, & O'Kearney, 2009).

Implementation factors noted in the framework above were considered throughout the planning and delivery of the program. To balance the design of the interventions from the positive psychology literature with the need to fit the activities to the context, PEPP session plans were developed based on the literature, with supporting Microsoft PowerPoint slides. These were distributed to care group teachers ahead of time to allow teachers to add their personal touches (e.g., their own meaningful photos and 'three good things'). Teacher input to the PEPP during training sessions produced several innovative features, including the use of videos in the presentation. To help foster recipient engagement, information sheets were handed to students prior to participation in the PEPP. The sheet included a peer's testimonial to help normalize participation in the program. Layous et al. (2013) found participants who read testimonials extolling the virtues of a positive psychology intervention showed larger gains in wellbeing than those who read neutral information or completed a control task. While stakeholder input was sought throughout the development of the intervention, time and resource challenges remained in its incorporation into the PEPP. To help the intervention be practically feasible, MoodGYM was a core part of the program

## **Study Design**

**Intervention Evaluation.** The effectiveness of the PEPP was evaluated using a non-randomized wait-list design with existing student groups. While the design brings various limitations, it was chosen to allow the research to occur while minimizing disruptions to the school. Grade 9 was divided into two groups; each group

comprised four care groups determined by the DP, the year-level coordinator and the care group teachers themselves. As summarized in Table 4.1, members in both groups completed a baseline measure at the commencement of term 2 of 2016 (T1). Group 1 then completed the PEPP in term 2 and Group 2 completed the PEPP in term 3. Measures were repeated after Group 1 completed the PEPP (T2) and after Group 2 completed the PEPP (T3). As noted in the table, participation varied across each measurement occasion.

Each measure included standardized quantitative measures of wellbeing, ill-being and resilience, as outlined below (see results for reliability information). For the group having just completed the PEPP, additional quantitative and qualitative questions were included to evaluate the PEPP's implementation.

***EPOCH Measure of Adolescent Well-Being.*** The 20-item measure of adolescent wellbeing (EPOCH; Kern et al., 2016) was chosen to provide indicators of positive psychological functioning across five domains: Engagement, Perseverance, Optimism, Connectedness and Happiness. Respondents indicated the extent to which they agree with each item (5-point Likert scale; e.g., 'I keep at my schoolwork until I am done with it'). Scores for each domain are based on the average of the four items. Kern et al. (2016) found the measure had adequate psychometric properties across multiple samples.

***Connor-Davidson Resilience Scale.*** The 10-item Connor-Davidson Resilience Scale (CD-RISC 10; Davidson & Connor, 2015) was used to provide an indication of adaptability and resilience. Respondents indicated the extent to which each statement described them (5 point scale; e.g., "I tend to bounce back after illness, injury, or other hardships"), then items were summed to create a total resilience score (higher scores indicate greater resilience). Davidson and Connor (2015) state Flesch-Kincaid Grade scores are 5.1 for all three versions of the scale, meaning it should be easily understood by 12-year olds.

***Depression Anxiety Stress Scale (DASS-21).*** The Depression Anxiety Stress Scale-21 (DASS-21) was used to provide an indication of respondents' negative emotional states (Lovibond & Lovibond, 1995). The DASS-21 is a 21 item self-report measure appropriate for individuals aged 12 years or more and is comprised of scales for depression, anxiety, and stress. Respondents indicated on 4-point Likert scale the

extent to which each statement described them over the past week (e.g., “I found it hard to wind down”). The DASS-21 has been shown to be a valid measure of psychological distress in young people. Tully, Zajac, and Venning (2009) found the DASS-21 to have excellent psychometric properties within an adolescent population (N=4039, aged 12-18 years), reporting a high internal consistency for all scales.

**Implementation Evaluation.** A theory-driven, realist approach was used to critically examine implementation factors (IFs) impacting the PEPP (see Appendix 10). Realist models use mixed methods and acknowledge both the objective and subjective in creating reality (Kelly, 2012b). Using the organizing framework (see Figure 4.1 above) as a base, quantitative and qualitative data were collected from within each implementation area of the model. Table 4.2 summarizes the range of types of data and perspectives to evaluate IFs. These included focus groups with students and with teachers, an interview with the DP, questionnaires completed by parents and teachers, and consideration of the school’s strategic plans.

Table 4.2  
*Sources of Implementation Evaluation Data.*

	Quantitative data collection	Qualitative data collection
Students	<ul style="list-style-type: none"> <li>8 evaluative items in post-PEPP questionnaire to students (n=102).</li> </ul>	<ul style="list-style-type: none"> <li>2 open ended questions in post-PEPP questionnaire to students (n=125).</li> <li>Student focus group (n=10).</li> </ul>
Teachers	<ul style="list-style-type: none"> <li>13 item pre-PEPP questionnaire to teachers (n=6).</li> <li>10 item post-PEPP questionnaire to teachers (n=5).</li> </ul>	<ul style="list-style-type: none"> <li>Teacher focus group (n=5).</li> </ul>
School		<ul style="list-style-type: none"> <li>Interview with Deputy Principal (DP; n=1).</li> <li>School Context Statement 2016.</li> <li>DECD Strategic Plan 2014-2017.</li> </ul>
Parents	<ul style="list-style-type: none"> <li>5 item post-PEPP Parent Questionnaire (n=43).</li> </ul>	

*Note.* Number of respondents in parentheses.

**Student questionnaire.** Eight quantitative and two qualitative questions evaluating students' understanding of emotions after the PEPP, their belief in the need for positive education, their buy-in to it, and their satisfaction with the PEPP were included in the questionnaire of the group immediately completing the PEPP. Questions also asked for their feedback on how they would improve positive education for year nines next year.

**Focus groups and interviews.** Focus groups were used to gain data grounded in the experience of the participants and to access insights produced by interaction among participants (Smithson, 2008). Student focus group selection was guided by a coordinating teacher who knew the students and who had been briefed about the need for a wide selection of students. Teacher focus group participants were all grade 9 care group teachers who were available on the day. Focus groups and the DP interview were semi-structured with questions including: 'What were some of your general experiences of teaching positive education to students?' (teacher focus group), 'How did positive education change your thinking or behavior?' (student focus group), 'How well did the grade 9 teachers 'buy-in' to the positive education pilot program?' (DP interview). The interview and teacher focus group were recorded and transcribed verbatim, while due to ethical issues the students' focus group was not. The first author took notes at the student focus group then developed a report with no identifying information included. A supervising school teacher present at the focus group affirmed the report.

**Teacher questionnaires.** Teachers completed questionnaires prior to and at the completion of the PEPP evaluating: their belief in the need for positive education; their understanding of the rationale for it; their belief in their own teaching efficacy; and the level of support, training and input they had in implementing the PEPP.

**Parent questionnaires.** All parents and guardians of students in grade 9 were invited via email to complete a brief online questionnaire gauging their awareness of their child's participation in positive education, their observation of its impact, and their opinion of a school's role in teaching social and emotional concepts.

**Data Analyses.** Data analyses aimed first to consider the effect of the PEPP, and second to understand implementation factors impacting intervention success.

**Impact of the PEPP.** Based on the included measures, we defined ‘mental health’ as a combination of wellbeing (EPOCH and CD-RISC) and ill-being (DASS-21) variables. We hypothesized that the PEPP would improve mental health (i.e., increased Engagement, Perseverance, Optimism, Connectedness, Happiness and Resilience and decreased Depression, Anxiety and Stress) from T1 to T2 for Group 1 and from T2 to T3 for Group 2.

To encourage honest responses to the measures, students were linked to their care group, but not individually identified. As such, individual responses could not be linked across measurement occasions. Sample sizes also varied across each measurement occasion. To address these challenges, we tested differences between groups at T2 using regression analysis, with scores anchored to each participant’s care group. The model thus takes into account differences at baseline and clustering due to care group, but also results in considerable within-group noise, making it harder to find effects. Providing more stable estimates, further ill-being analyses incorporating T3 used a bootstrap approach, re-sampling 2000 times and using the bias-corrected and accelerated method for confidence intervals (Efron & Tibshirani, 1994). Invalid cases were excluded on an analysis basis; thus, sample sizes vary between variables.

As per Thompson’s (2007) suggestion, regardless of statistical significance, where possible we report: mean differences, their confidence intervals, effect sizes and confidence intervals for effect sizes. Confidence intervals are reported to provide information about statistical significance, as well as the direction and strength of the effect (Shakespeare, Gebiski, Veness, & Simes, 2001). For considering between group differences at T2, effects are reported as Cohen’s  $f^2$ , and Cohen’s (1988) guidelines were used to interpret the size of the effect ( $f^2 \geq 0.02$ ,  $f^2 \geq 0.15$ , and  $f^2 \geq 0.35$  represent small, medium, and large effect sizes, respectively). For analyses including T3, we use Cohen’s  $d$ , with  $d = .2$ ,  $.5$ , and  $.8$  indicating small, medium, and large effects, respectively.

**Mixed method analysis of IFs.** To consider factors in the practice of the intervention, data were first electronicised and entered into N-Vivo, a data analysis program able to hold both qualitative and quantitative data. Data were triangulated across the various datasets using the ‘following a thread’ method (Moran-Ellis et al.,

2004; Moran-Ellis et al., 2006). The approach aims to preserve the integrity of each dataset, such that the resulting analysis is “greater than the sum of the (methodological) parts” (Cronin et al., 2008, p. 584, p. 584).

Datasets were conceptually placed alongside each other and electronically coded into ‘nodes’ using the tools in N-Vivo. Qualitative data analysis software is thought to be based on grounded theory approaches to data analysis, in that the electronic tools enable the data to ‘speak for themselves’ (Welsh, 2002). The lead researcher continued this grounded inductive approach (Moran-Ellis et al., 2006) to identify key themes or ‘threads’ and questions requiring further explanation at initial analysis. These threads become more focused as they are followed across both qualitative and quantitative components of the study (methodological triangulation) and across sources of data (data triangulation) to generate a multi-faceted picture of the phenomenon (Johnson et al., 2007; O’Cathain et al., 2010). Agreement, partial agreement, silence, and dissonance were considered by using tools in the N-Vivo program; N-Vivo allowed for comprehensive searches, various quantitative analyses, and quantitative visualizations of the data.

Ten threads were initially identified, which we then mapped to our model. After consultation with members of the research team, data were reviewed, themes refined, and threads consolidated, resulting in six final threads.

## **4.4 Results**

### **Impact of the PEPP**

Our first objective was to examine whether the PEPP was beneficial in increasing wellbeing and resilience and decreasing ill-being. The two groups were very similar at baseline with no statistically significant differences evident (see Table 4.3 and Table 4.4 for measure descriptive statistics across the three measurement occasions). Between T1 and T2, mean scores for the wellbeing variables increased in both groups.

Table 4.3

*Descriptive Statistics and Reliability Information for Study Variables Across the Three Measurement Occasions.*

	Time 1 (baseline)								Time 2 (post PEPP for Group 1)								Time 3 (post PEPP for Group 2)							
	Group 1				Group 2				Group 1				Group 2				Group 1				Group 2			
	n	M	SD	$\alpha$	n	M	SD	$\alpha$	n	M	SD	$\alpha$	n	M	SD	$\alpha$	n	M	SD	$\alpha$	n	M	SD	$\alpha$
Engagement	68	2.99	0.84	.798	46	2.84	0.84	.805	67	3.15	0.90	.901	70	3.02	0.91	.885	59	3.10	0.87	.885	48	3.03	0.98	.927
Perseverance	68	2.92	0.80	.772	46	2.96	0.88	.831	67	3.19	0.84	.845	70	3.29	0.84	.848	59	3.24	0.94	.835	48	3.09	0.93	.860
Optimism	68	3.05	0.88	.809	46	3.15	0.87	.785	67	3.19	0.84	.835	70	3.47	0.88	.844	59	3.42	0.78	.789	48	3.43	0.94	.845
Connectedness	68	3.83	0.87	.786	46	3.63	1.03	.882	67	3.85	0.88	.855	70	3.88	0.98	.870	59	3.95	0.89	.857	48	3.92	0.96	.866
Happiness	68	3.26	1.00	.909	46	3.32	0.92	.896	67	3.56	0.94	.913	70	3.65	0.89	.860	59	3.69	0.82	.842	48	3.60	1.00	.910
Resilience	67	23.27	6.98	.886	43	24.77	6.88	.880	62	23.81	7.20	.911	67	26.03	7.30	.915	56	23.95	8.92	.949	43	25.23	7.44	.902
Depression	68	4.75	4.55	.896	44	4.80	3.44	.806	63	4.84	4.12	.905	70	5.71	4.93	.927	57	5.05	5.37	.952	45	4.84	4.37	.906
Anxiety	68	5.19	4.41	.857	44	4.64	3.10	.690	63	5.10	4.03	.829	70	5.97	4.75	.881	57	5.09	5.05	.920	45	5.49	5.40	.917
Stress	68	6.22	4.39	.846	44	5.75	3.77	.826	63	6.46	4.04	.847	70	6.47	4.58	.911	57	6.11	4.82	.908	45	6.36	4.65	.888



Table 4.4

*Range of Study Variables Across the Three Measurement Occasions.*

	Possible range	Time 1		Time 2		Time 3	
		Group 1	Group 2	Group 1	Group 2	Group 1	Group 2
Engagement	1 - 5	1.00 - 4.75	1.00 - 4.25	1.00 - 3.5	1.25 - 5.00	1.50 - 5.00	1.00 - 5.00
Perseverance	1 - 5	1.00 - 4.25	1.25 - 4.75	1.75 - 5.00	1.50 - 5.00	1.25 - 5.00	1.00 - 5.00
Optimism	1 - 5	1.00 - 4.75	1.25 - 4.75	1.00 - 5.00	1.50 - 5.00	1.75 - 5.00	1.00 - 5.00
Connectedness	1 - 5	1.50 - 5.00	1.25 - 5	1.75 - 5.00	1.25 - 5.00	2.00 - 5.00	1.00 - 5.00
Happiness	1 - 5	1.00 - 5.00	1.75 - 4.75	1.50 - 5.00	2.00 - 5.00	2.00 - 5.00	1.00 - 5.00
Resilience	0 - 40	5.00 - 39.00	7.00 - 38.00	0 - 40.00	9.00 - 40.00	1.00 - 40.00	10.00 - 40.00
Depression	0 - 21	0 - 18.00	0 - 13.00	0 - 15.00	0 - 21.00	0 - 19.00	0 - 21.00
Anxiety	0 - 21	0 - 17.00	0 - 10.00	0 - 16.00	0 - 21.00	0 - 15.00	0 - 21.00
Stress	0 - 21	0 - 19.00	0 - 14.00	0 - 18.00	0 - 21.00	0 - 17.00	0 - 21.00

As noted in Table 4.5, regression analyses indicated statistically significant differences between the two groups only for Optimism, with the Group 2 (the waitlisted control group) scoring higher on Optimism with a small effect than Group 1 (the treatment group)

Table 4.5

*Comparison of Groups at T2 Taking into Account Baseline Differences.*

Variable	Group	N	Mean	Skew -ness	Kurtosis	Difference between groups	95% Confidence interval	Sig.	Effect size (Cohen's f <sup>2</sup> )
Engagement	Group 1	67	3.16	.56	-.50	.15	-.16, .47	<i>p</i> =.328	0.007
	Group 2	70	3.01	.55	-.21				
Perseverance	Group 1	67	3.21	.20	-.66	-.07	-.35, .22	<i>p</i> =0.648	0.002
	Group 2	70	3.27	-.17	-.08				
Optimism	Group 1	67	3.13	-.04	-.02	-.39	-.70, -.09	<i>p</i> =0.012	0.046
	Group 2	70	3.52	-.25	-.77				
Connectedness	Group 1	67	3.82	-.71	-.01	.10	-.41, .20	<i>p</i> =0.506	0.003
	Group 2	70	3.92	-.80	-.21				
Happiness	Group 1	67	3.58	-.28	-.66	-.04	-.35, .27	<i>p</i> =0.780	0.001
	Group 2	70	3.63	-.22	-.89				
Resilience	Group 1	62	24.29	-.08	1.58	-1.29	-4.11, 1.54	<i>p</i> =0.372	0.006
	Group 2	67	25.58	.00	-.16				
Depression	Group 1	63	4.72	.64	-.48	-1.1	-2.66, .46	<i>p</i> =0.168	0.014
	Group 2	70	5.82	1.00	1.04				
Anxiety	Group 1	63	4.82	.46	-.48	-1.38	-2.98, .21	<i>p</i> =0.088	0.022
	Group 2	70	6.21	1.01	1.07				
Stress	Group 1	63	6.23	.41	.20	-.45	-1.96, 1.08	<i>p</i> =0.569	0.003
	Group 2	70	6.68	.88	1.00				

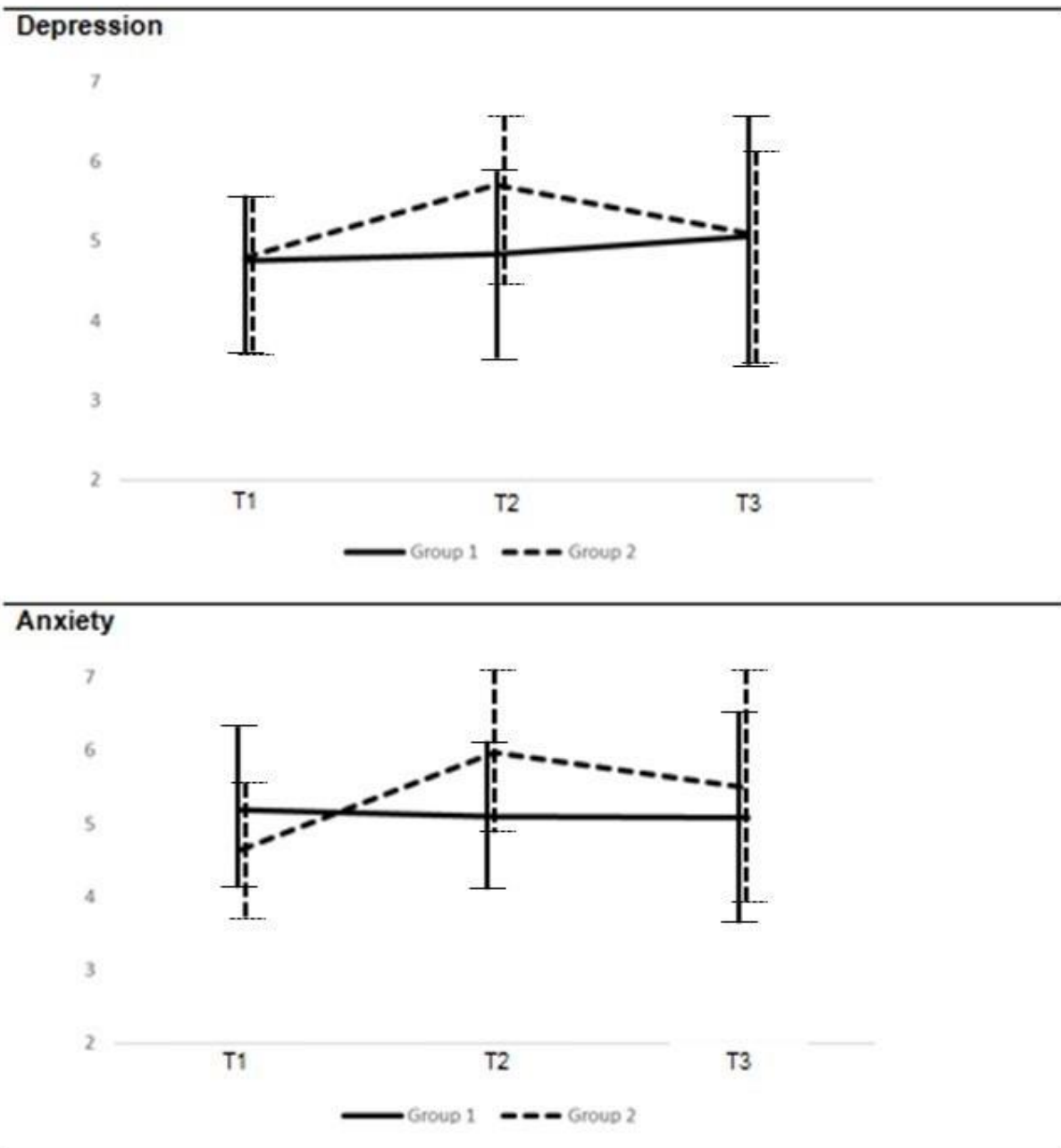
For the depression and anxiety variables, the pattern of scores suggests a buffering effect of the intervention. Table 4.6 and Figure 4.2 show that Group 1 remained stable across the three time points while group 2 showed an increase in depression and anxiety at T2, then a decrease at T3 back to baseline levels. Between T1 and T2 when Group 1 completed the PEPP and Group 2 was acting as the wait-listed control, mean increases in depression and anxiety can be seen for Group 2 with a small to medium effect, compared to virtually no change in Group 1. Between T2 and T3 when Group 2 completed the PEPP, we can see depression and anxiety drop with a small effect in Group 2 and Group 1 remaining stable. However, we note that these indicate trends only; all changes and differences were non-significant.

Table 4.6

*Depression and Anxiety for the Duration of the Study.*

		T1		Change from T1 to T2		T2		Change from T2 to T3		T3	
		N	M (CI <sub>a</sub> )	MD (CI <sub>a</sub> )	Effect size (CI <sub>b</sub> )	N	M (CI <sub>a</sub> )	MD (CI <sub>a</sub> )	Effect size (CI <sub>b</sub> )	N	M (CI <sub>a</sub> )
<b>Depression</b>	Group 1	68	4.75 (3.69, 5.82)	.09 (-1.40, 1.58)	.02 (-.32, .36)	63	4.84 (3.81, 5.92)	.21 (-1.46, 1.90)	.04 (-.31, .40)	57	5.05 (3.71, 6.52)
	Group 2	44	4.80 (3.85, 5.79)	.92 (-.572.39)	.21 (-.17, .58)	70	5.71 (4.67,6.80)	-.87 (-2.57, .87)	-.18 (-.56, .19)	45	4.84 (3.70, 6.05)
<b>Anxiety</b>	Group 1	68	5.19 (4.15, 6.27)	-.10 (-1.56, 1.28)	-.02 (-.37, 0.32)	63	5.10 (4.11, 6.17)	-.01 (-1.67, 1.68)	.00 (-.36, .36)	57	5.09 (3.83, 6.42)
	Group 2	44	4.64 (3.73, 5.55)	1.34 (-.05, 2.73)	.32 (-.07, .69)	70	5.97 (4.98, 7.01)	-.48 (-2.35, 1.54)	-.10 (-.47, .28)	45	5.49 (4.06, 7.01)

*Note.* M=mean, MD=mean difference, a=bootstrapped 95% confidence interval<sub>BCa</sub>, b=95% confidence interval around effect size.



*Figure 4.2.* Average depression (top) and anxiety (bottom) scores with bootstrapped 95% CIBCa at baseline (T1), after group 1 participated in the PEPP (T2) and after group 2 participated in the PEPP (T3).

### Factors Impacting Program Practice

Our second objective was to consider factors that impact the intervention in practice. Drawing on qualitative and quantitative data from the different data sources (student, teacher and parent questionnaires; teacher and student focus groups; DP interview), we integrate and illustrate threads that appeared. The

threads, and agreement or disagreement between sources of data are discussed below. Quotes have been presented with context in parentheses for clarity.

**“Activities were good but MoodGYM sucked.”** A common theme, summed up by a student in a questionnaire response regarding the content of the PEPP, reflected both positive reactions to some aspects of the PEPP and negative reactions to other parts. Teachers talked about the encouraging student engagement during the first sessions (comprised of the positive education practices). These positive effects were lost when they began the computerized ill-being prevention program (MoodGYM). Student feedback was largely consistent with this, highlighting their dissatisfaction with MoodGYM, especially with having to do it on a computer and the number of ‘quizzes’ or surveys the program contained. For instance, a teacher in the focus group noted:

*“The kids bought into it early, the first bit with the ‘acts of kindness’, ‘the three good things’, they seem to be able to relate to it, it was pretty easy going to present it. And then once MoodGYM was up and going I lost them.”*

Similarly, in the student questionnaire, a student noted:

*“With the mood gym thing, I got the anxiety and the depression quiz like 7 times each. I feel like I seem to be doing the same questions over and over again.”*

Still, even as some students responded negatively to the program, qualitative data from both teachers and students suggested that the program may be valuable to students struggling with poor mental health. Students also saw the need for including a mental health program such as positive education in the school (48% agreed, 19.6% disagreed and 33.3% were neutral). For instance, one student noted: *“I think those activities were very helpful to identify how you as an individual is/was feeling. I don’t believe that there is anything to improve it seems pretty down pat.”*

Teachers thought the frequency of one class a week for one term “was about right”, and the school was happy with where it was positioned in pastoral care. The Deputy Principal noted *““There’s no denying it fits within pastoral care because pastoral care is around learning programs that help young people to develop themselves and their pathways, their goals and their futures so it is around how do we teach kids to develop themselves.”* Parents were also generally positive about the program in their feedback.

Of the activities, the gratitude letter had the most favorable feedback, but teachers noticed how it was difficult for some students to complete the gratitude letter and offered suggestions to allow more time to think of an appropriate recipient, write it, and to mail it. For instance, one teacher noted: *“Kids who spoke about it (positive education) to me spoke about the gratitude letter.”* After writing a gratitude letter to her mother, a focus group student reflected on her changed behavior: *“I actually am really nice to my mum now.”*

**The value of input from multiple stakeholders.** The school and governmental department support the inclusion of multiple stakeholders in decision-making, including students. Indeed, the Department of Education and Child Development’s (DECD) Strategic Plan for 2014-2017 notes: *“What success looks like: Children’s and young people’s voices are being heard and incorporated into our decision-making and teaching and learning processes.”* As such, the PEPP purposely included multiple stakeholders, including students in the design and conduct of the intervention. In the end, however, the school was aware of the need to better inform the governing council and parents, such that all stakeholders feel like they have a voice and are well-informed of the purpose and process of PEPP.

More than a third (39.3%) of students agreed that “it was good that some school students were involved in planning and explaining positive education” (16.6% disagreed, 44.1% neutral). Student input regarding the improvement of the PEPP centred on doing more hands-on, interactive, and group activities. They asked for more videos, with one student in the focus group suggesting that the entire year level could be involved with producing their own video about wellbeing. A common suggestion by students was to have less writing, to avoid the perception of positive education as ‘school work’. In contrast, teachers made suggestions of how positive education could be *counted* as school work. No students made this suggestion.

**Benefits and challenges of existing programs.** There was widespread feedback highlighting how attending to the negative in the subject matter and the quizzes of MoodGYM actually seemed to cause more negative affect. For instance, one teacher noted: *“I spoke to one (student) outside in the corridor and he said, ‘the questions make me think I am depressed or I’ve got anxiety issues.’”* Similarly, students noted in questionnaire responses *“Remove the moodgym (sic.) program it just makes you*

*more depressed than when you started” and “Thinking about these things will just make the situation worse so its (sic.) best to just support them and not teach.”*

This thread exposes the kind of unintentional harm that universal mental health programs may cause. There were many suggestions from teachers and students pointing toward alternatives to the online prevention program chosen for the PEPP. Both groups suggested involving an external party or mental health expert, to teach or introduce positive education. Students suggested that lessons focused on coping strategies could be valuable. Students in the focus group observed that depression and suicide had seemingly been less of an issue in the past. One student asked, *“why is it now when we’ve never had it so good?”* Students holding this opinion may benefit from alternative approaches to MoodGYM that place mental health problems within their historical and social context.

Some teachers appreciated the classroom posters as supporting material, with some requesting to keep them in their classroom after their class had completed the PEPP. One teacher even suggested the MoodGYM ‘Warpy Thinking’ posters could be the basis of some activity. Alternatively, students suggested that instead of MoodGYM, the school should do something framed as how to help others, *“because then you know how to help your friends, but you know it all for yourself too.”* It should provide information about where to go, but also guide students in signs of psychological ill-being in their friends, and how to encourage them to seek help. This should include practical advice like what to say and where to go; *“helping care for one another.”*

**Teacher Efficacy.** Minimal training was provided for the teachers, and teachers had mixed opinions about its adequacy. The school had the potential to better support teachers in their delivery of the PEPP, but did not want to interfere with what they considered a controlled research trial. The DP noted: *“In hindsight we could’ve, we should’ve, given them more support (but) we were interested in this as being a piece of research.”*

Despite the minimal training and need for greater support, teachers showed enthusiasm, buy-in and self-reported efficacy prior to PEPP implementation. There was full agreement (100%) on being “willing and open” to teaching positive education to their pastoral care students and full agreement (100%) on the understanding of

“the rationale behind positive education”. They showed satisfaction with the Power Point Presentations and were happy with the specified places in the teaching material to personalise and adapt content. Teachers noted: “(There are) *clear teaching slides. So (I was) able to replay and add-in examples and (had) time to try the activities,*” And “*I was doing (the positive activities) and showing my care group that I did it. They were like ‘well you’ve done it, I can do it too’. Rather than (slides showing) a generic photo of nothing.*”

The DP reported that “*We had a group of teachers who were very willing to (teach it)*”. Students also saw benefit to the buy-in and excitement that their teachers brought to the intervention, with the majority of students reporting that positive education was taught well by the teachers (51%; 15.7% disagreed and 33.3% were neutral).

**Gender Matters.** Students and teachers agreed that attitudes toward the PEPP were dependent on gender. Although it may be the *perception* of whether or not a PEPP is acceptable depends on gender, whereas the *benefit* is less distinctive. Boys were less willing than girls to participate in the activities, or at least they wanted to appear so. The first author and SRC facilitators made similar observations during the student focus group. However, there were no statistically significant gender differences in responses to evaluative questions about the value of and satisfaction with the PEPP. A teacher astutely noted:

*“In my care group in particular I had lots of boys ... the boys didn’t buy-in and the girls did, but I think the boys wanted to say that they weren’t interested in it, but they still did it. Our boys still did it all and contributed and talked about it and they might have been a bit painful in terms of getting them to engage at the time and getting them to talk seriously about anything that we were talking about without them trying to muck around, but they actually still did it (agreement from another teacher in the room) and some of the ones that really actually needed it, were those ones. So they put a front up and pretended they weren’t interested in it, but they were actually listening and taking part in it.”*

**Fit with school culture.** The school had been laying the foundation for positive education for quite some time, forming it as part of the school culture, and preparing the community for change to happen. The DP noted “*I think we were ready (for*



change) *in that we were very ready to have something happen, we needed to have something happen.*” Despite minimal training, the staff felt well supported to carry out teaching positive education by the school. One teacher noted: *“I think the structures are in place for anyone to be supported with it. I did some training, I thought that was enough.”*

There was also support for the intervention by parents and school leadership. Various stakeholders recognized the need for some kind of adolescent mental health and wellbeing intervention at the school, and parents overwhelmingly supported social and emotional concepts being taught at school, with 97% saying they thought it was extremely or somewhat important and 3% were neutral. The DP reflected:

*“We know that anxiety and depression is an issue that needs attention. So the aim of the program developed was quite clearly directed toward that was adapted to us, and the fact that it actually gave us some evidence based ways to help students develop those skills makes it better, because often that doesn't happen.”*

Still, although positive education fit with the school and the department’s strategic priorities, school support by the department was not unequivocal. The DP further reflected:

*“(The department is) not opposed to it, but there's no support for it. I think the department is hedging their bets. They're obviously a little bit interested because as I said wellbeing is certainly a priority, the department tends to see wellbeing in terms of student attendance, student achievement; those measurable, objective things. So the wellbeing in terms of the state of mental health isn't what they've thought about.”*

#### 4.5 Discussion

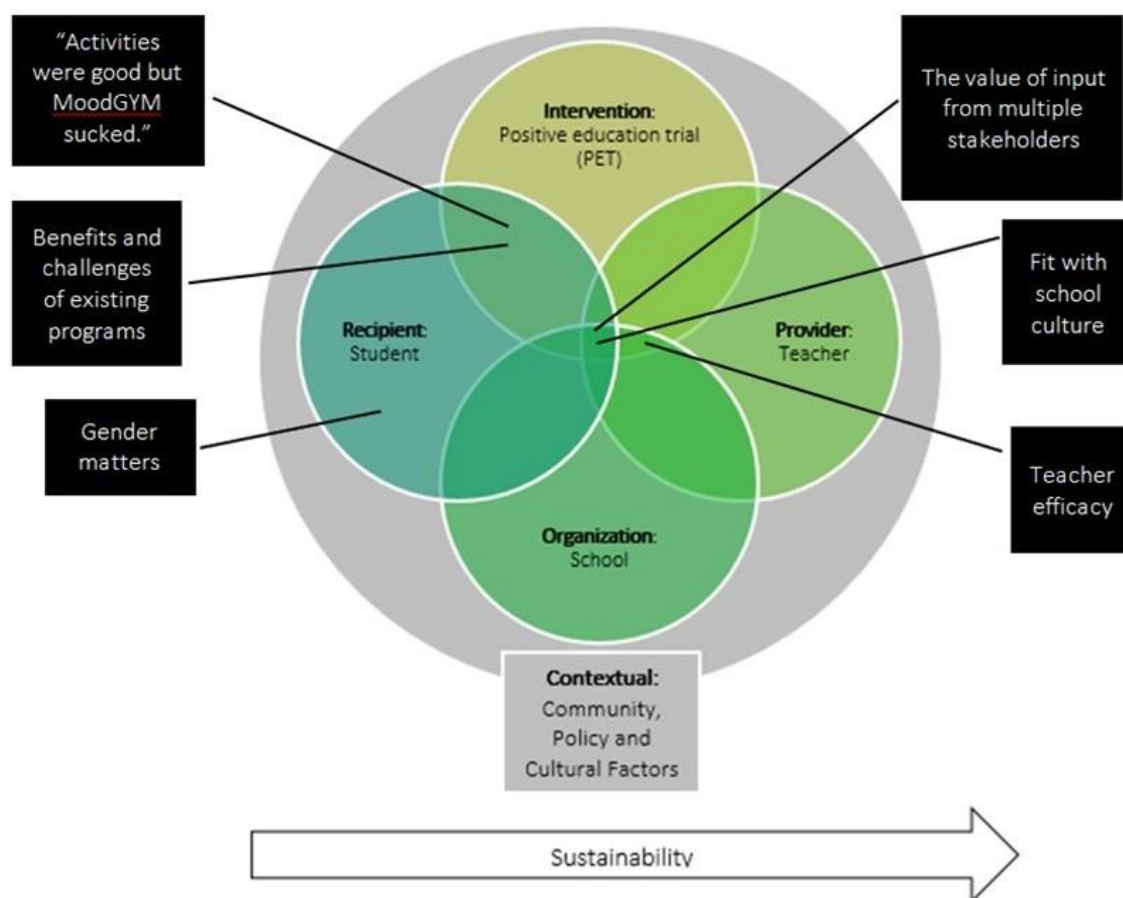
This case study evaluated the impact of a positive education pilot program and explored factors that were likely to have influenced that impact. In addressing these questions, we integrated multiple methods and perspectives to understand challenges and successes of the program holistically.

The measures found little evidence of changes in wellbeing and resilience. While wellbeing variables did increase as groups participated in the PEPP, there was

also improvement in Group 2 when acting as the 'control'. This may point to confounding variables, contamination effects of the PEPP, or a positive impact of participation in data collection. The PEPP was also compulsory, which also may have affected reported wellbeing. Other studies find that effects are stronger when participants voluntarily engage in a positive intervention and are motivated to change (e.g., Sin & Lyubomirsky, 2009)

The questionnaires suggested there may be a possible buffering effect on ill-being. While the control group reported increases in depression and anxiety at time 2, which then decreased after receiving the intervention, the initial treatment group remained stable across the three assessments. Other studies similarly find declines in adolescent mental health during a school year, i.e. wellbeing declines and ill-being increases. For example, an Australian adolescent sample (N=521, grades 9-11) from a variety of schools showed this pattern both in students who participated in a comprehensive positive education program, and control students who did not (Vella-Brodrick et al., 2014). Boniwell et al. (2016) and Haraldsson et al. (2008) found similar declines in mental health during the school year in their respective Southeast London and Swedish adolescent control samples, and found a buffering effect of their respective wellbeing interventions on their treatment samples when compared to their control samples. Vella-Brodrick et al. (2014) posit this trend of a decline in mental health may be a reflection of the substantial but transient demands students experience from their studies, as well as increasing challenges of adolescence. Authors also speculate their results show that the wellbeing intervention prevented this decline. We speculate the PEPP in this study may have had some buffering effect against the decline of mental health, but this needs to be further tested in other samples.

Beyond the impact of the PEPP, we also considered factors in implementation that may have impacted the PEPP. Drawing on qualitative and quantitative data from multiple perspectives (students, teachers, parents, deputy principal, author observations), several themes appeared. Figure 4.3 revisits our conceptual model, illustrating how the six identified threads conceptually fit with our model.



*Figure 4.3.* Illustration of implementation factors impacting the intervention, based on the different data sources and perspectives, mapped within the context of our overlying organizing framework.

In terms of intervention factors, the fit between the intervention and the recipient mattered. Factors such as need, fit with the organization’s mission, timing within the school calendar, and fidelity vs. adaptation, were carefully considered prior to delivery. While parts were well received, other parts did not suit many of the recipients. This is consistent with a recent review which found outcomes of school-based mental health programs have strongest association with students’ receptiveness to the intervention, defined as the degree of relevance of the intervention to participants (Rojas-Andrade & Bahamondes, 2018). Although the intervention was informed by action research completed by students the previous year, it was also limited by pragmatic considerations. For example, MoodGYM formed a core part of the PEPP, due to its succinct delivery and strong evidence base

for addressing depression and anxiety, an identified need in the school. Yet many students were dissatisfied with MoodGYM. The previous action research study found that students were open to the use of technology in positive education if it did not involve too much reading on the screen (Halliday et al., 2017a). In addition, the subject matter itself increased participants' awareness to negative aspects, unintentionally causing some students to feel greater distress. This reveals ways that universal mental health programs may cause unintended harm. Despite the evidence for MoodGYM's clinical effectiveness, real-world student advice seemed to take precedence and should be considered with more weight in the future. Lyon and Koerner (2016) suggest user-centered design may overcome problems with evidence-based initiatives, making them more accessible, appealing and by extension, more effective. Future studies might further investigate user-centered approaches to developing positive education programs.

An important recipient factor that impacted the PEPP was gender. Males *appeared* less likely to enjoy or benefit from the PEPP, although analysis of evaluative data did not indicate this. This presentation is consistent with an endorsement of the masculine norm of 'self-reliance', which has been consistently unfavorably related to help seeking for mental health (Wong, Ho, Wang, & Miller, 2017). The classroom culture, of which gender norms and expectations are a part, has been identified as an implementation challenge (e.g., Ijadi-Maghsoodi et al., 2017), and it is noted that in general, males are less aware of their feelings than females, and less comfortable talking about them with others (Englar-Carlson & Kiselica, 2011). In addition, the stigma of mental health issues remains (Kern, Mathur, et al., 2017), more so among males (e.g., Chandra & Minkovitz, 2006; Eisenberg, Downs, Golberstein, & Zivin, 2009). Employing an identity from the sporting world has been used in some school-based programs to overcome stigma associated with depression (e.g. Robinson et al., 2010). Further investigation regarding the impact of recipient gender in school-based mental health programs is needed.

Another relevant factor was teacher efficacy, which intersects provider (teachers), intervention (PEPP) and organization (school) factors. Prior research suggests that the results of wellbeing programs are highly dependent on the sense of ownership of the teachers involved (e.g., Ijadi-Maghsoodi et al., 2017; Knoop, 2010).

Notably, teachers generally felt confident in leading the PEPP despite receiving little training and were open to teaching emotional health and wellbeing concepts and knew the reasons for doing so. The organization has done a lot of groundwork to set the stage for the PEPP, showing clear support for the program. This suggests that minimal training for an intervention's provider may be overcome with organizational support, combined with the enthusiasm and understanding of providers. Teachers were also satisfied with being able to adapt content within a structured presentation. Successful adaptation has been found to be possible as long as a program's established core components are retained (Durlak, 2013, p. 12).

Despite these successes, some teachers desired additional support and lacked efficacy. Langley et al. (2010) found supervisory consultation for providers a key enabler in their investigation of barriers and facilitators in the implementation of school-based mental health programs. Providing learning opportunities through observation, meaningful discussion, practice and reflection ('performance feedback'; Domitrovich et al., 2008, p. 10) may provide the efficacy some teachers found was lacking. In the present study, time and resources were limited for providing such support. In addition, the leadership knew that the program was part of a research trial and were concerned about contaminating the study results by intervening and providing additional training. School leaders may benefit from clarity around how to stay true to research while still providing adequate provider support.

Finally, stakeholder involvement is a factor that brings together the areas of intervention, recipient, provider, and organization. Involvement of an organization's members in decision making is considered a critical factor in successful implementation, decreasing resistance to change and increasing motivation and commitment (Domitrovich et al., 2008). Students and teachers had input into the PEPP, and further contributions were gained from the present study's evaluation of the program in practice. For example, focus groups revealed the need for mental health problems to be put into historical context for better understanding, as was the value of concrete supportive material in the classroom. Parental engagement may be an untapped resource; parents were not mentioned by teachers or students as a help or a hindrance, yet our data show they are widely supportive of positive education. Familial support is an essential component in school-based interventions, but

parental engagement requires sensitivity (see Kern, Mathur, et al., 2017 for a summary of considerations) and a time-efficient outcome (Langley et al., 2010).

### **Limitations and Future Directions**

The project was undertaken in a real-world setting, where we were unable to control many aspects of the intervention, with pragmatic consideration limiting what could be done. Groups were not randomly assigned, limiting any causal explanations for the results. The intervention occurred within a specific school context, and may not generalize to other schools or other cultures and year levels. A major limitation was the inability to directly link individual level data across time points. This meant that there was considerably more unexplained within-group variance, making it harder to find significant change. We also employed a non-randomized pre-test, post-test wait-list design. While this is a common approach for evaluating of interventions in schools, this design brings along various limitations. Participants were asked the same questions over three different time points and we cannot be sure that changes are real or the effect of repeated testing. While the wait-list approach may be useful in evaluating the short-term impact of an intervention, it is limited in long-term evaluations of impact. Further, only the short-term impact of the intervention was considered, with the final assessment occurring after the second group received the intervention. Evidence suggests that longer interventions are more effective than shorter interventions (Sin & Lyubomirsky, 2009) and interventions of this nature may only have visible impact in the longer term (Slemp et al., 2017). There were also methodological limitations that may have impacted participants' responses; for example, the first author developed the PEPP and also led the student focus group. While it was not explicit who developed the content of the PEPP, participants may have felt compelled to give positive feedback.

Despite these limitations, the study does demonstrate the value of scrutinizing recipient factors that impact the delivery and outcomes of a program; this may prove a productive area for future research. Pre-implementation activities aimed at increasing buy-in among parents, school administrators and staff are recognized as an important part of a program's implementation (Langley et al., 2010), but how important is the buy-in of recipients to program success? And can this be influenced

in a pragmatic time-frame? The various factors impacting the delivery and success of a program may be more or less modifiable (Berkel, Mauricio, Schoenfelder, & Sandler, 2011; Durlak, 2013; Kam, Greenberg, & Walls, 2003); further study is needed into the value and plasticity of recipient characteristics. The study of how sustainability interacts with identified influential factors will also be important to evaluate.

## **Conclusion**

This paper described an evaluation of positive education ‘in action’ in a school, examining both the intervention and its practice. While prior reviews of school-based mental health interventions show positive effects of such programs (e.g. Nehmy & Wade, 2014; Wells et al., 2003), there is a need to go beyond looking at overall impact alone, to consider factors that make an intervention more or less successful (Slemp et al., 2017). Incorporating an implementation perspective helps designers not only develop interventions that can work, but also ones that can successfully be implemented in everyday school settings. Our approach takes a step forward in this regard, identifying some of the conditions and actions that likely impact positive education in practice. Key factors included characteristics of the recipients, fit between the intervention and the recipients, and the importance of input from multiple stakeholders. Findings also suggested that a lack of provider training may be overcome with enthusiasm and understanding. As a whole, the study provides a systematic investigation of critical barriers and enablers in the ‘doing’ of positive education in the real world. It is an exploratory yet important initial step towards successful positive education in practice.

## 5 Chapter 5 – Study 3

One of the major findings of study two was that recipient characteristics, such as gender, may play an important part of a program's acceptability. This was applied in study three which examined the intersection of gender, mental health and physical activity. Study three looked at the gender gap in mental health, the association of mental health and physical activity in each gender, and explored the influence of physical activity in the relationship between gender and mental health. Results may help build evidence for the inclusion of physical activity in positive education.

### Statement of Authorship

Title of Paper	Does Physical Activity Help Explain the Gender Gap in Adolescent Mental Health?
Publication Status	<input type="checkbox"/> Published <input type="checkbox"/> Accepted for Publication <input checked="" type="checkbox"/> Submitted for Publication <input type="checkbox"/> Unpublished and Unsubmitted work written in manuscript style

### Principal Author

Name of Principal Author (Candidate)	Amber Halliday		
Contribution to the Paper	Collected data, interpreted data, drafted and submitted manuscript, made revisions and acted as corresponding author.		
Overall percentage (%)	85%		
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
Signature		Date	19/1/19



### Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

- i. the candidate's stated contribution to the publication is accurate (as detailed above);
- ii. permission is granted for the candidate to include the publication in the thesis; and
- iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Margaret Kern		
Contribution to the Paper	Supervised in development of work, refining direction of methodology employed in the research. Provided editorial input by commenting and refining material presented in drafts.		
Signature		Date	20/1/19

Name of Co-Author	Deborah Turnbull		
Contribution to the Paper	Supervised in development of work, refining direction of methodology employed in the research. Provided editorial input by commenting and refining material presented in drafts.		
Signature		Date	21/1/19

The text and tables presented in this chapter appear the same as submitted, except for minor formatting changes such as renumbering for consistency within the thesis. References and acknowledgments have been included in those of the thesis.



## Can Physical Activity Help Explain the Gender Gap in Adolescent Mental Health?

### A cross-sectional exploration

#### 5.1 Abstract

Studies find that physical activity links with mental health, females engage in less physical activity than males, and females have worse mental health than males. Less attention has been paid to the intersection of physical activity, mental health, and gender. Might physical activity explain links between gender and mental health in adolescence? Or does the mental health benefit of physical activity depend on gender? In addition, while physical activity correlates with better mental health overall, physical activity may be more beneficial for some domains versus others. Using four years of cross-sectional data from students (N=1,756, age 13-18), we (1) confirmed gender differences in physical activity and mental health, replicating prior studies; examined gender (2) as a confounding variable and (3) as a moderator of the physical activity-mental health link; and (4) tested physical activity as a mediator between gender and mental health. In addition, we consider whether associations vary for different positive and negative health domains. Females reported poorer mental health; males engaged in more physical activity. Physical activity was associated with all markers of mental health, having stronger correlations with Engagement and Perseverance than other positive and negative domains. Results better supported a mediational model (physical activity mediating gender-mental health associations) than a moderation model (gender moderating physical activity and mental health associations). Findings indicate the value of physical activity as an adolescent mental health intervention and suggest that barriers to females' participation in physical activity should be considered.

*Keywords:* Physical activity, gender, wellbeing, mental health, adolescence

## 5.2 Introduction

It is a robust finding that physical activity has beneficial associations with good mental health (Biddle & Asare, 2011; Daley, 2008; Penedo & Dahn, 2005). However, physical activity participation varies by gender; as evidenced by both the scientific literature (e.g., Azevedo et al., 2007) and multiple nations' census data (e.g., Australian Bureau of Statistics, 2013), with females less likely to engage in physical activity than males. Notably, females also report poorer mental health than males, reporting both higher rates of internalising disorders and, albeit less consistently, lower levels of positive psychological functioning (Rosenfield & Mouzon, 2013; Shute, 2016). These differences in physical activity and mental health begin in adolescence and continue into adulthood (Telzer & Fuligni, 2013; Trost et al., 2002).

While evidence of these links is strong, studies that directly connect gender, mental health, and physical activity in adolescence are relatively sparse. Could females' lack of physical activity help to explain their poorer levels of mental health? Alternatively, due to a variety of biological and social factors, associations between physical activity and mental health might differ for males and females. Might males simply derive more mental health benefits from their participation in physical activity? In addition, while many studies focus on the benefit of physical activity to different types of mental illness, including depression, anxiety, and schizophrenia (e.g., Bailey et al., 2017; Rosenbaum, Tiedemann, Sherrington, Curtis, & Ward, 2014; Ströhle, 2009), less is known about the link between physical activity and different domains of *positive* psychological functioning, such as social connectedness, optimism, and resilience. Which domains of positive mental health might benefit the most from higher levels of physical activity? The current study aims to answer these questions by examining associations amongst gender, physical activity, and positive mental health and negative mental health in adolescents.

### **Associations between Physical Activity and Mental Health**

Mental health includes both positive and negative domains of psychological functioning (World Health Organization, 2013). For our purposes here, we define positive mental health as dimensions of psychological functioning that are positive and adaptive (e.g., optimism, perseverance, engagement, resilience), whereas

negative mental health refers to mental health problems, disorders, and symptomatology of mental illness (e.g., depression, anxiety). We define physical activity in line with the World Health Organization (2011, para. 1) as “any bodily movement produced by skeletal muscles that results in energy expenditure”. Physical activity includes the subsets of ‘exercise’ and ‘sport’ – these terms are often used interchangeably (for discussion of types, intensities and measurements of physical activity see Kern, 2015).

It is now widely acknowledged that the benefits of physical activity extend well beyond physical health, impacting mental health (Eime, Young, Harvey, Charity, & Payne, 2013), cognitive functioning (Kramer & Erickson, 2007), and social relationships (Kern, 2015). The bulk of evidence comes from cross-sectional data, making it difficult to state that physical activity *causes* better mental health, but a growing number of experimental (e.g., Christiansen et al., 2018; Oddie et al., 2014) and longitudinal studies (see Mammen & Faulkner, 2013 for a systematic review of prospective-based, longitudinal studies) support physical activity as being beneficial across a range of domains.

Both cross-sectional and longitudinal studies demonstrate physical activity’s inverse association with negative mental health, especially for depression (Daley, 2008; Morgan, Parker, Alvarez-Jimenez, & Jorm, 2013). Physical activity has been investigated as a preventative intervention (e.g., Mammen & Faulkner, 2013) and as a treatment (e.g., Paluska & Schwenk, 2000) for negative mental health, and has been found to be a less expensive, longer lasting and equally effective treatment compared to psychotherapy or medication (Daley, 2008; Kern, 2015). Associations most likely are also bi-directional; physical inactivity may be the antecedent and/or the result of poor mental health (Hoare, Milton, Foster, & Allender, 2016; Morgan et al., 2013)

Fewer studies have focused on positive mental health, but existing evidence again links physical activity to better positive mental health. For example, in a large representative sample of 11,110 European adolescents, physical activity levels and participation in sport were found to independently contribute to higher levels of wellbeing (McMahon et al., 2017). Physical activity has been linked with greater curiosity, exploratory behaviour, and mental toughness (Brand et al., 2017; Gerber et

al., 2012). In a systematic review, Rasberry and colleagues (2011) linked physical activity with better cognitive skills and attitudes, academic behaviours, and academic achievement.

### **Gender Gaps in Physical Activity and Mental Health**

Notably, there are gaps between males and females in both and mental health. Across decades and cultures, males overwhelmingly report engaging in a greater amount and higher intensity physical activity than females (e.g., Armstrong & Welsman, 2006; Azevedo et al., 2007; Brand et al., 2017; Colley et al., 2011; Sallis et al., 2000; Trost et al., 2002; Voss et al., 2013). For example, across 17 countries (out of 20), females reported being less engaged in highly-active physical activity than males (Bauman et al., 2009). In Australia, males reported higher rates of high level physical activity (19%, compared with 11% of females) and lower rates of low levels of physical activity (31% compared with 39% of females) (Australian Bureau of Statistics, 2013). The gender gap in physical activity begins in childhood. In a review of children and adolescents 7-16 years of age, males of all ages were found to participate in more physical activity than females and this gender difference was more apparent when vigorous activity was considered (Armstrong & Welsman, 2006).

In a parallel vein, data consistently reveals “something deeply worrying about girls’ well-being” (Finch, Hargrave, Nicholls, & van Vliet, 2014, p. 8). It has been estimated that 29% of females experience depression in their lifetime, compared to 18% of males, while 34% of females versus 23% of males experience anxiety (Rosenfield & Mouzon, 2013). This likely begins in early adolescence; findings across cultures, ethnic groups, nations, socioeconomic backgrounds, point to mental health being similar before age 11, and by age 18, girls are more than twice as likely as boys to experience internalising symptoms (Telzer & Fuligni, 2013). Notably, Kessler (2003), suggested that higher rates of depression among adult females is due to a higher risk of initial onset, rather than differential persistence or recurrence, making adolescence a crucial time for intervention both for treatment and prevention.

Evidence of females’ lower positive mental health is less consistent than evidence for negative mental health, but still is concerning. Adult studies have shown females measuring lower in positive mental health constructs such as self-efficacy

and resilience (e.g., Bergman & Scott, 2001; Roy et al., 2018; Tonym & Weinberg, 2018), although females often report better social relationships (e.g., Ryff & Keyes, 1995). Lehtinen et al. (2005) found better positive mental health in males, but also note inconsistencies across 10,878 participants in 11 European countries. Studies involving young people generally show females report lower positive mental health than males. For instance, a government report of 42,577 students in grades 6-9 (approximately aged 10-14 years) found that girls reported lower emotional wellbeing (satisfaction with life, optimism, happiness) than boys, largely due to girls reporting a greater decline as they transitioned into secondary schooling (Department for Education and Child Development, 2017). However, the size and direction of gender differences depends on the domain under consideration. For example, data collected from almost 7,000 adolescents in the UK found that, at 16 years of age, females were lower in self-esteem, emotional wellbeing, life satisfaction and resilience than males, whereas there was little difference for satisfaction with friends (Finch et al., 2014). Across 1,930 Australian middle/junior high school students, females scored significantly lower than males on measures of resilience, global self-concept, flourishing, and emotional and psychological wellbeing, but reported greater levels of cognitive and affective empathy and self-reflection (Skrzypiec, Askell-Williams, Slee, & Rudzinski, 2014).

### **The Current Study**

Gender differences are clearly seen in physical activity and mental health, with males likely to be more active and experience better mental health than females, in both adolescents and adults. Notably, across studies, gender is often ignored or controlled, rather than directly investigated. The current study examines the role that gender plays in the relationship between gender and mental health, testing potential mediating and moderating associations amongst gender, physical activity, and mental health. We use four years of cross-sectional data collected from adolescents annually from 2014 to 2017, providing a replication of analyses across four datasets. As physical activity and mental health tend to be confounded with age (e.g., Armstrong & Welsman, 2006; Armstrong, Bauman, & Davies, 2000; Bauman et al., 2009; Corder et al., 2015; Rowland, 1999; Trost et al., 2002; Voss et al., 2013), we

control for age in our analyses. We (1) replicate existing trends, testing whether boys are more physically active and report better mental health than females in these datasets; (2) test gender as a confounding variable, examining the extent to which physical activity and gender uniquely correlate with mental health; (3) test gender as a moderator of physical activity and mental health associations, assessing the extent to which associations between physical activity and mental health differ by gender; and (4) test physical activity as a mediator between gender and mental health, examining the extent to which physical activity might explain associations between them. In addition, within each set of analyses, we explore physical activity's association with different domains of positive mental health that were assessed in the study (i.e., Engagement, Perseverance, Optimism, Connectedness, Happiness or Resilience), and how this compares with physical activity-negative mental health associations.

### 5.3 Method

#### Participants, Study Design and Setting

An online questionnaire was completed by students during school time in 2014, 2015, 2016 and 2017 at a government (i.e., publicly funded) high school in Australia ( $N=1,756$ , mean age =14.5 years,  $SD=1.29$ , 48.1% female<sup>4</sup>, 15.4% language other than English spoken at home (LOTE). Students aged less than 13 years were excluded. In 2014, grade 8s, 9s and 10s were invited to complete the questionnaire. In 2015, grades 11s were also included. In 2016 and 2017, grade 12s were also included, resulting in the final sample sets. To protect student privacy, no identifying information was collected. Some students most likely completed the survey in two or more years, but it was impossible to connect responses, such that it is unknown how dependent or independent the datasets are. To avoid potential dependencies in the data, we analyse each year separately rather than combining the sets together.

---

<sup>4</sup> The 2017 questionnaire included third answer option for gender; 'gender diverse'. Eleven individuals identified as gender diverse, some with incomplete datasets, thus this category was treated as missing data.



The school, located in the suburbs of a major Australian city, has a similar Index of Community Socio-Educational Advantage<sup>5</sup> to the Australian average. Third party informed consent was gained from students' parents/guardians. Procedures were approved by the University of Adelaide Human Research Ethics Subcommittee (reference numbers 14/22, 15/15, 16/02, 17/04) and South Australia's Department of Education and Child Development Research Unit (reference numbers CS/14/511-15, CS/15/00005-1.3, CS/16/00067-1.1, CS/17/000750-1.2).

## Measures

At a similar time each year, students with consent completed an online survey, which measured demographic information, physical activity and mental health. Demographic information included age, gender, LOTE, grade and pastoral care group (i.e., homeroom).

**EPOCH Measure of Adolescent Well-Being.** The 20-item measure of adolescent wellbeing (EPOCH: Kern et al., 2016) provided indicators of positive mental health across five domains: Engagement, Perseverance, Optimism, Connectedness and Happiness. Respondents indicated the extent to which they agree with each item (5-point Likert scale; e.g., 'I keep at my schoolwork until I am done with it'). Engagement refers to being interested in and involved at school, Perseverance refers to sticking with tasks despite challenges, Optimism refers to hopefulness and confidence about the future, Connectedness refers to the presence of satisfying relationships with others, Happiness refers to a general tendency towards feeling happy and enjoying life (Kern et al., 2016). Scores for each domain were based on the average of four items. Kern et al. (2016) found good internal consistency adequate psychometric properties of the measure across multiple

---

<sup>5</sup> ICSEA provides an indication of the level of educational advantage of the school's student population relative to those of other schools using the geographical location of the school, the proportion of indigenous students catered for, and the occupation and level of education of students' parents'. In 2016, scores ranged from 125 for a school in remote Arnhem Land, to 1308 for an independent inner-city Sydney school. At the time of writing, ICSEA data was available for 2014 (1067), 2015 (1060) and 2016 (1068). The Australian average is 1000 (Australian Curriculum Assessment and Reporting Authority, 2012).

samples of US and Australian adolescents. The measure demonstrated adequate reliability in the current sample (see Appendix 11A for all measures' reliability data).

**Connor-Davidson Resilience Scale.** The 10-item Connor-Davidson Resilience Scale (CD-RISC 10; Davidson & Connor, 2015) was used to provide an indication of one's adaptability and ability to cope with stress. Respondents indicated the extent to which each statement described them (5-point scale; e.g., "I tend to bounce back after illness, injury, or other hardships"), then items were summed to create a total resilience score, higher scores indicate greater resilience. This scale was included only from 2016.

**Depression Anxiety Stress Scale (DASS-21).** The Depression Anxiety Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995) was used to provide an indication of respondents' negative emotional states. The DASS-21 is a 21 item self-report measure appropriate for individuals aged 12 years or more and is comprised of scales for Depression, Anxiety, and Stress. Respondents indicated on 4-point Likert scale the extent to which each statement described them over the past week (e.g., "I found it hard to wind down"). Tully et al. (2009) found the DASS-21 to have excellent psychometric properties within an adolescent population (N=4,039, aged 12-18 years), reporting a high internal consistency for all scales.

**Physical Activity Questionnaire – Adolescents (PAQ-A).** The Physical Activity Questionnaire for Adolescents (PAQ-A; Kowalski et al., 2004) was employed as a standardised measure of levels of physical activity. The measure does not discriminate between specific activity intensities, but instead assesses a general level of physical activity. The PAQ-A is comprised of nine items using a 5-point Likert-type scale and asks for physical activity in the last 7 days (e.g., "what did you normally do at lunch (besides eating lunch)? 1. Sat down (talking, reading, doing schoolwork), 2. Stood around or walked around, 3. Ran or played a little bit, 4. Ran around and played quite a bit, 5. Ran and played hard most of the time). To be culturally relevant, we adjusted a few of the items (e.g., cross-country skiing and ice hockey/ringette were omitted and replaced with football and netball). The PAQ-A is scored between 1 (low) and 5 (high). The PAQ-A has been found to have good internal consistency and moderately high concurrent validity (Janz, Lutuchy, Wenthe, & Levy, 2008).

## Statistical Analysis

First,<sup>6</sup> systematic differences in physical activity and mental health between genders were examined using independent samples t-tests, with bootstrapping of confidence intervals (CIs) using the bias-corrected and accelerated method, re-sampling 2000 times (Efron & Tibshirani, 1994). Where possible we report effect sizes and CIs as per recommendation of Thompson (2007). Second, we tested associations of mental health variables, gender and physical activity, controlling for age, using hierarchical linear regression with simultaneous entry of variables. Third, we examined moderation of the relationship between physical activity and mental health by gender using moderated multiple regression. Physical activity was used to predict mental health, treating gender as a dichotomous interaction term. Fourth, we examined evidence of physical activity as a mediator between gender and mental health using the PROCESS macro (Hayes, 2012). All analyses were carried out using SPSS (version 23) software.

This study uses cross-sectional data, thus, while physical activity cannot cause gender and mental health cannot cause gender, there is no way of establishing the causal ordering of the observed relationship between physical activity and mental health. Many argue that mediation should not be used with cross-sectional data (e.g., Maxwell & Cole, 2007). However others point out that in light of real-world constraints, knowledge can still be gained from cross-sectional mediation analyses (e.g., Disabato, 2016; Hayes, 2017). By confirming that variables do relate with each other as would be expected if mediation does indeed exist, cross-sectional mediation analyses suggest that subsequent longitudinal studies would indeed be beneficial. There are multiple approaches to mediation analyses, but we chose to take a ‘test of joint significance’ approach recommended by Hayes (2009), which balances Type I error with statistical power (MacKinnon et al., 2002). This involved (i) determining the statistical significance of path a and b, and (ii) calculating the significance of the indirect effect (the difference between path c and c’) of gender on mental health via physical activity by computing the 95% CIs (Efron & Tibshirani, 1994), using a

---

<sup>6</sup> A mixed model analysis was used to examine the magnitude of systematic variance within pastoral care groups (i.e., homerooms) in the 2017 data, with the variance explained (<3%) deemed unlikely to influence results (Field, 2009); thus a single level approach was taken.

bootstrap estimation process with 5000 samples (Preacher & Hayes, 2004). To satisfy the criteria for mediation, the 95% CIs must not cross zero. Bootstrap tests are powerful as they detect that the sampling distribution of the mediated effect is skewed away from zero (Shrout & Bolger, 2002).

## 5.4 Results

Table 5.1 provides descriptive statistics for the sample in each year of measurement. The samples were comparable in terms of number, gender and LOTE. For simplicity, we report the most recent data (2017), but replicate analyses using the data from 2016, 2015 and 2014 (see Appendices 11B-11E for results from these years). Data from all years is not combined due to the likelihood of repeated cases.

Table 5.1

*Sample characteristics: Adolescent cross-sectional data collected across four years.*

Variable	2014	2015	2016	2017
Age (years)	14.05 (.92)	14.56 (1.23)	14.77 (1.36)	14.58 (1.44)
Total <i>n</i>	401	454	496	405
Females	192 (47.88)	231 (50.88)	229 (46.17)	193 (47.65)
Males	209 (52.12)	223 (49.12)	267 (53.83)	212 (52.35)
LOTE	56 (13.97)	77 (16.96)	74 (14.92)	66 (16.30)
Physical Activity	2.59 (.77)	2.49 (.80)	2.49 (.82)	2.55 (.84)
Engagement	3.00 (.91)	3.00 (.82)	2.96 (.87)	3.06 (.86)
Perseverance	3.15 (.85)	3.29 (.80)	3.10 (.87)	3.22 (.87)
Optimism	3.13 (.95)	3.29 (.86)	3.15 (.90)	3.26 (.92)
Connectedness	3.82 (.89)	4.02 (.80)	3.82 (.93)	3.93 (.93)
Happiness	3.46 (1.00)	3.60 (.90)	3.44 (.99)	3.59 (.93)
Resilience	-	-	23.48 (7.79)	20.89 (11.53)
Depression	4.24 (4.53)	5.25 (4.86)	4.86 (4.34)	4.14 (4.54)
Anxiety	4.17 (4.53)	5.28 (4.59)	4.92 (3.98)	4.31 (4.26)
Stress	5.14 (4.01)	6.71 (4.66)	6.21 (4.21)	5.06 (4.35)

*Note.* All units are presented as mean (SD) except for *n* which is presented as *n* (%).

LOTE = Language other than English. Resilience was measured beginning in 2016.

### Gender Differences in Physical Activity and Mental Health

Independent sample t-tests with bootstrapped CIs indicated a significant difference between genders with a small to medium effect size in physical activity and mental health, suggesting that there are indeed gender differences in physical activity and mental health, with males being more active and reporting better mental health (Table 5.2). In particular, there were significant differences in all negative mental health variables, Engagement, Optimism, Happiness and, with lesser effect, Resilience. In previous years' datasets there were consistent gender differences in physical activity, Depression, Anxiety and Stress with small to medium effects, though inconsistencies occurred in positive mental health variables (see Appendix 11B). For instance, gender differences in Engagement and Optimism were statistically significant only in one of the past three years, and there was little evidence of gender differences favouring males for Connectedness. Across all datasets, notable gender differences in Happiness, Depression, Anxiety and Stress that favoured males were evident.

Table 5.2

*Gender differences in Physical Activity and Mental Health in 2017.*

	Group Statistics				Independent samples t-test						
	Gender	Mean	N	SD	Mean difference	t	df	p	Bootstrapped 95% CI	Effect size (Cohen's d)	CI around Effect size
Physical Activity	Males	2.74	186	0.90	0.37	4.28	352.078	.000	.20, .55	.45	.24, .65
	Females	2.37	176	0.74							
Engagement	Males	3.22	183	0.86	0.30	3.42	355	.001	.13, .47	.36	.15, .57
	Females	2.92	174	0.82							
Perseverance	Males	3.28	183	0.84	0.08	0.94	355	.349	-.09, .27	.10	-.11, .31
	Females	3.20	174	0.87							
Optimism	Males	3.44	183	0.88	0.29	3.08	355	.002	.10, .47	.33	.12, .53
	Females	3.15	174	0.91							
Connectedness	Males	3.91	183	0.91	-0.10	-1.01	355	.312	-.28, .08	-.11	-.31, .10
	Females	4.01	174	0.88							
Happiness	Males	3.78	183	0.91	0.31	3.14	355	.002	.12, .50	.33	.12, .54
	Females	3.47	174	0.97							
Resilience	Males	21.65	212	12.40	1.25	2.69	355	.007	.70, 4.52	.11	-.09, .30
	Females	20.40	192	10.33							
Depression	Males	3.11	212	3.80	-1.82	-4.28	369.16	.000	-2.61, -1.01	-.43	-.63, -.23
	Females	4.93	192	4.65							
Anxiety	Males	3.23	212	3.53	-2.05	-5.19	369.74	.000	-2.87, -1.25	-.52	-.72, -.32
	Females	5.28	192	4.32							
Stress	Males	3.81	212	3.66	-2.41	-5.94	372.5	.000	-3.22, -1.61	-.60	-.79, -.40
	Females	6.21	192	4.40							

*Note.* See Appendix 11B for results for the 2014-2016 data.

### **Gender as a Confounding Variable**

To test gender as a confounding variable in the link between physical activity and mental health, we regressed age, gender and physical activity onto each mental health variable, examining the magnitude of each predictor. Results for 2017 data are summarised in Table 5.3. Gender was not a statistically significant predictor for Perseverance, Connectedness or Resilience, but was a significant predictor for all other positive mental health variables. For Engagement, Optimism and Happiness, the beta coefficient indicated that physical activity was a stronger predictor of positive mental health than gender. Gender was a significant predictor for negative mental health variables, and the beta coefficient indicated it was a stronger predictor than physical activity. Physical Activity was not a significant predictor of Anxiety or Stress. Age was a statistically significant predictor only for Stress.

Table 5.3

*Age, Gender and Physical Activity Regressed onto Mental Health Variables – 2017 data.*

		<b>N</b>	<b>β</b>	<b>t</b>	<b>p</b>
<b>Engagement</b>	<b>Age</b>		-.02	-.48	.633
	<b>Gender</b>	357	-.11	-2.15	.032
	<b>Physical activity</b>		.31	5.95	.000
<b>Perseverance</b>	<b>Age</b>		-.10	-1.84	.067
	<b>Gender</b>	357	.01	.10	.921
	<b>Physical activity</b>		.24	4.52	.000
<b>Optimism</b>	<b>Age</b>		.01	.19	.849
	<b>Gender</b>	357	-.11	-2.06	.040
	<b>Physical activity</b>		.24	4.50	.000
<b>Connectedness</b>	<b>Age</b>		.01	.21	.832
	<b>Gender</b>	357	.09	1.75	.081
	<b>Physical activity</b>		.18	3.33	.001
<b>Happiness</b>	<b>Age</b>		-.08	-1.63	.105
	<b>Gender</b>	357	-.11	-2.18	.030
	<b>Physical activity</b>		.23	4.25	.000
<b>Resilience</b>	<b>Age</b>		.07	1.39	.164
	<b>Gender</b>	362	-.10	-1.91	.057
	<b>Physical activity</b>		.13	2.27	.024
<b>Depression</b>	<b>Age</b>		.08	1.56	.120
	<b>Gender</b>	362	.17	3.35	.001
	<b>Physical activity</b>		-.17	-3.16	.002
<b>Anxiety</b>	<b>Age</b>		.07	1.37	.172
	<b>Gender</b>	362	.25	4.81	.000
	<b>Physical activity</b>		-.04	-.65	.515
<b>Stress</b>	<b>Age</b>		.14	2.63	.009
	<b>Gender</b>	362	.30	5.78	.000
	<b>Physical activity</b>		-.01	-.26	.792

*Note.* See Appendix 11C for results for the 2014-2016 data.

Data from previous years shows similar patterns (Appendix 11C). With physical activity as a predictor in the model, gender was not a significant predictor for Engagement, Optimism and Happiness in any year, but was consistently still a significant predictor of all negative mental health variables in all years. Physical activity was a significant predictor for all positive mental health variables but, with one exception, was not a significant predictor of Anxiety or Stress. Physical activity significantly predicted Depression in all but one of the years. Beta weights indicated physical activity was a stronger predictor than gender for positive mental health



variables, while gender was a stronger predictor for negative mental health variables. Age was significant in only six of the possible 25 calculations.

### **Association of Mental Health and Physical Activity by Gender**

Table 5.4 shows that gender did not moderate effects of physical activity on mental health (results replicated across 2014-2016, see Appendix 11D). Out of 36 moderations calculated across the four datasets, there was only one significant statistic (physical activity and Perseverance in 2016, with 1.2% additional variance explained), suggesting no robust effects.

Table 5.4

*Moderation of Physical Activity and Mental Health by Gender – 2017 data.*

<b>Variable</b>	<b>R<sup>2</sup></b>	<b>N</b>	
<b>Engagement</b>	.001	357	F(1,352)=.41, <i>p</i> =.522
<b>Perseverance</b>	.002	357	F(1,352)=.71, <i>p</i> =.399
<b>Optimism</b>	.000	357	F(1,352)=.01, <i>p</i> =.921
<b>Connectedness</b>	.000	357	F(1,352)=.05, <i>p</i> =.829
<b>Happiness</b>	.000	357	F(1,352)=.05, <i>p</i> =.817
<b>Resilience</b>	.001	362	F(1,357)=.22, <i>p</i> =.640
<b>Depression</b>	.000	362	F(1,357)=.05, <i>p</i> =.831
<b>Anxiety</b>	.004	362	F(1,357)=1.40, <i>p</i> =.238
<b>Stress</b>	.002	362	F(1,357)=.85, <i>p</i> =.357

*Note.* See Appendix 11D for results for the 2014-2016 data.

### **Physical Activity as a Mediator between Gender and Mental Health**

Table 5.5 summarises results testing physical activity as a mediator between gender and mental health. Results supported physical activity as influential in the association between gender and positive mental health and Depression, but not Anxiety or Stress. The bootstrapped confidence intervals for the indirect effect did not cross zero for any positive mental health variables or Depression, meaning they were significant at the *p*<.05 level, such that there is a statistically significant difference between path *c* (the link between gender and positive mental health) and path *c'* (the link between gender and positive mental health through physical activity). Mediation effects were strongest for Engagement, followed by Perseverance, Optimism, Happiness and Depression.

Table 5.5

*Model Statistics for Gender on Mental Health Mediated by Physical Activity.*

	n	Path a	Path b	Path c'	Overall Model	Indirect effect [Bootstrapped 95%CI]
Engagement	357	b=.37***, t(354)=4.31	b=.32***, t(353)=5.95	b=.19*, t(353)=2.15	F(3,353) = 17.39***, R <sup>2</sup> =.13	b=.12 [.06, .20]
Perseverance	357	b=.37***, t(354)=4.31	b=.25***, t(353)=4.52	b=-.01, t(353)=-.10	F(3,353)=10.14***, R <sup>2</sup> =.08	b=.09 [.04, .16]
Optimism	357	b=.37***, t(354)=4.31	b=.26***, t(353)=4.50	b=.19*, t(353)=2.06	F(3,353) = 10.36***, R <sup>2</sup> =.08	b=.09 [.04, .17]
Connectedness	357	b=.37***, t(354)=4.31	b=.20**, t(353)=3.33	b=-1.7, t(353)=-1.75	F(3,353)=4.16**, R <sup>2</sup> =.03	b=.07 [.03, .14]
Happiness	357	b=.37***, t(354)=4.31	b=.26***, t(353)=4.25	b=.22*, t(353)=2.188	F(3,353) = 12.00***, R <sup>2</sup> =.09	b=.09 [.04, .17]
Resilience	362	b=.36***, t(359)=4.31	b=1.40*, t(358)=2.27	b=1.93, t(358)=1.91	F(3,358) = 4.00*, R <sup>2</sup> =.03	b=.51 [.08, 1.10]
Depression	362	b=.36***, t(359)=4.31	b=-.87**, t(358)=-3.12	b=-1.50**, t(358)=-3.35	F(3,358)=11.14***, R <sup>2</sup> =-.09	b=-.31 [-.65, -.11]
Anxiety	362	b=.36***, t(359)=4.31	b=-.17, t(358)=-.65	b=-2.01***, t(358)=-4.81	F(3,358)=9.67***, R <sup>2</sup> =.07	b=-.06 [-.31, .14]
Stress	362	b=.36***, t(359)=4.31	b=-.07, t(358)=-.26	b=-2.40***, t(358)=-5.78	F(3,358)=14.73***, R <sup>2</sup> =.11	b=-.02 [-.23, .16]

Note. \*p<.05, \*\*p<.001 \*\*\*p<.0005. 2017 data. See Appendix 11E for results for the 2014-2016 data.

Similar patterns emerged across the other years, supporting physical activity as a pathway linking gender and all positive mental health variables, across all four datasets (Appendix E). Mediation effects were strongest for Engagement, Perseverance, Optimism and Happiness. There was also evidence for partial mediation for the link between gender and Depression in all years except 2016. In contrast, results were inconsistent for Anxiety and Stress; mediation calculations were not statistically significant, except for Anxiety in 2016, in which the more physical activity an individual did, the higher their anxiety.

## 5.5 Discussion

Despite known gender differences in physical activity and mental health, studies often treat gender either as a confounding variable and control gender in models, or ignore gender, testing models for the sample as a whole. Using four years of cross-sectional data with Australian adolescent students, this study examined the role of gender in greater detail, comparing evidence for three models: physical activity and mental health controlling for gender, gender as a moderator of physical activity-mental health associations, and physical activity and a mediator between gender and mental health. The results suggest that mental health is impacted more by what one does (e.g., physical activity) than who one is (e.g., one's gender or age). physical activity may mediate gender and mental health associations, such that part of known gender differences in mental health could be attributed to adolescent girls engaging in less physical activity than adolescent boys. However, associations amongst gender, physical activity, and mental health also depended upon the mental health domain under consideration.

Aligned with existing studies (e.g., Armstrong & Welsman, 2006; Colley et al., 2011; Finch et al., 2014; Skrzypiec et al., 2014), across the four adolescent samples, females engaged in less physical activity than males. Studies consistently find gender-based differences in physical activity, with greater decline across adolescence for females than for males in both the intensity and frequency of physical activity (Armstrong & Welsman, 2006; Rowland, 1999). Yet, consistent with recent research (e.g., McPhie & Rawana, 2015), there is similar mental health benefit of physical

activity between genders; moderation analyses suggest the mental health benefit of physical activity is not dependent on one's gender in this sample. The connection between mental health and physical activity is complex and involves many factors such as domains of physical activity (e.g. leisure-time, household, occupational and transport), contextual considerations, and motivation (Cerin, Leslie, Sugiyama, & Owen, 2009; Hefferon, Murphy, McLeod, Mutrie, & Campbell, 2013; White, Olson, Parker, Astell-Burt, & Lonsdale, 2018). Future research on the connection between mental health and physical activity, taking into account potential moderators such as these, might extend the explanations of females' low participation when there is such evidence of a benefit to their mental health.

Females also reported worse mental health than males, but the strength of associations depended on the outcome. While negative mental health variables (Depression, Anxiety, Stress) consistently demonstrated a moderate gender gap, gender differences in positive mental health were smaller and less reliable, with stronger effects for Engagement, Optimism, and Happiness, and weaker effects for Perseverance and Connectedness. This is consistent with findings that females measure higher in social domains of positive psychological functioning such as positive relations with others and emotional support (Picco et al., 2017; Ryff & Keyes, 1995). However, findings in this area are also inconsistent. For example, a study of 10,148 North American adolescents found that although females reported higher school support than males, they also reported lower family communication and lower family closeness than males (Bennefield, 2018). Gender differences in positive mental health may be connected to culturally specific gender norms and expectations; further research might consider intersection of various domains of positive mental health, gender, and culture.

Notably, when directly compared, physical activity had a greater impact on positive mental health than did gender. Further, we found little evidence for a moderating effect of gender, but instead found support for a mediational model. Physical activity may act as one pathway through which gender has differential effects on mental health. Of course, these results need to be replicated through longitudinal studies that directly testing physical activity as a mediator. The pattern of

results does suggest that it would be beneficial to incorporate physical activity within mental health interventions for adolescents.

Recent studies have highlighted the importance of participation in physical activity for mental health among adolescents (e.g., McPhie & Rawana, 2015). An evaluation of a large-scale mental health initiative implemented at Geelong Grammar School in Australia found the greatest benefits in year nine students who lived together for the year in the foothills of the Victorian Alps, where students were exposed to intellectual, physical and emotional challenges under demanding environmental conditions (Vella-Brodrick et al., 2014). Brand et al. (2017) found that physical activity in adolescence had positive effects on sleep, exploratory behaviour, and mental toughness for both boys and girls, yet also found gender difference in physical activity participation. They concluded that physical activity interventions at this age might be more appropriately tailored to females. Together, our findings combined with other studies suggest the value of positive health behaviours, regardless of one's gender; the challenge moving forward is how to encourage physical activity for all adolescents.

### **Implications**

Across four samples, physical activity had a positive association with adolescents' mental health regardless of gender and may explain part of the gender gap in mental health. This points to the potential value that physical activity has as a school-based mental health intervention for adolescents. Physical activity has a preventative capacity, fosters positive emotions, and can help buffer individuals against the stresses of life in order to thrive (Faulkner et al., 2015). Educators around the world are concerned over the growing number of mental illness problems seen in youth (e.g., Allen et al., 2018; Kern, Mathur, et al., 2017; White & Murray, 2015). There are many factors influencing mental health – behaviours, feelings and cognitions (Dobson & Block, 1988), but behaviour is easiest to target within the school context. As schools consider how to balance curricular demands with time available, continuing to include opportunities for physical activity, such as physical education classes and sport, may serve as an important tool for combatting mental illness.

Beyond preventing or dealing with mental illness, this study also shows that physical activity may have a greater impact on specific domains of adolescent positive mental health, especially Engagement (being interested or involved; Fredricks, Blumenfeld, & Paris, 2004) and Perseverance (persistence in reaching a goal; Pury, 2009). Engagement has been connected to positive behaviour and achievement at school, across the spectrum of social and economic situation (Appleton, Christenson, & Furlong, 2008). Perseverance has also been recognised by educators as a desirable quality in students. For example perseverance, as measured by the EPOCH scale, was found to positively influence academic achievement over and above the impact of a student's background in a large South Australian government report (Department for Education and Child Development, 2017). The same report notes the potential benefits of developing perseverance for students, and that work is underway to determine an appropriate school-based intervention that builds it.

If physical activity is involved in such an intervention, consideration needs to be given as to how it should be integrated, with attention given to individual and contextual needs. The consistent gender gap in physical activity suggests barriers to girls' participation should be considered. Adolescence is a transitional period marked by many biological, environmental, social, and psychological factors which influence participation in physical activity (e.g., body image concerns, increase in study load) (Eime, Harvey, et al., 2013). Gender norms, and stereotypes, where to be active is masculine and causes a 'femininity deficit', have been found to be important to adolescent females' attitudes to physical activity (Spencer, Rehman, & Kirk, 2015). Teasing may also contribute to their reduced rates of participation in physical activity (Slater & Tiggemann, 2011). These all present possible barriers to increasing females' engagement in physical activity, and should be addressed to positively impact females' poor mental health through physical activity.

Likewise, on a cautionary note, the association of competitive sports and physical activity with stereotypically masculine traits may marginalise those that do not possess specific traits – both females *and* males (English, 2017). This should also be taken into consideration if physical activity is to be a feature of school-based mental health and wellbeing intervention.

## **Strengths and Limitations**

In the current study, we replicated analyses across four years, suggesting that the pattern of results is consistent, rather than being due to chance. Still, all data came from one high school in Australia, and thus could be unique to the particular school or cultural context. As students could not be matched across time points, we employed a cross-sectional design, replicated four times, rather than tracking students across multiple time points. In our model, we specified gender as the predictor, physical activity as the mediator, and mental health as an outcome. In most cases, gender temporally precedes physical activity and mental health, and thus logically makes sense as a predictor. In contrast, the causal direction of associations between mental health and physical activity cannot be determined with these data. Although many studies investigating a mediating effect have adopted this type design, longitudinal studies would allow a better understanding of the associations between gender, physical activity, and mental health.

We included both positive and negative mental health, providing greater insight into differential domains of adolescent mental health. The differential effect sizes support the value of distinguishing different domains, rather than looking at overall well-being or ill-being. However, the domains under consideration were specific to the measures included in the study. Numerous models and measures of mental health are available (OECD, 2013), future studies might consider other domains or use other measures.

We used a broad definition of physical activity. We saw evidence that this low level of activity offers mental health benefits, meaning more currently socially acceptable activities to females, such as yoga, may be used as school-based mental health interventions. However, we did not specifically investigate competitive and/or team sports. There is evidence that participation in organised team sport, seems to confer an additional benefit over and above that provided by activity alone, especially in adolescent females (e.g., McMahon et al., 2017). Further, there are varying interpretations of physical activity, although we tried to limit this by including our definition immediately prior to the relevant questionnaire items.

We rely on self-report data. Despite its wide use due to its ease and low cost, self-reported data on physical activity does have limitations (see Sirard & Pate, 2001 for full review). Young people often engage in physical activities in a less structured way compared to adults. This places considerable demands on young people's cognitive abilities in addition to their memories being filtered through biases and social desirability (Armstrong & Welsman, 2006).

At the request of the school, the 2017 measure included a gender diverse answer option alongside options of male or female. Eleven students identified as gender diverse, which was not enough to conduct meaningful statistical analyses, yet this could be an area for further qualitative research. Future studies might consider alternative gender identifications and links amongst shifting identity roles, physical activity, and mental health outcomes.

## **Conclusion**

Physical activity plays an important role in adolescent positive and negative mental health, regardless of gender. As schools consider strategies for proactively addressing mental health issues, physical activity should be considered as a school-based mental health intervention, with the potential to impact both positive and negative mental health of all students, and at the same time may serve to close the gender gap in mental health.



## 6 Chapter 6 – Discussion

This thesis sought to explore ways in which positive education can be ‘done’ better. It involved a series of three studies, conducted at an Australian public school, resulting in the three manuscripts presented here. This final chapter presents a critical discussion of the findings of this thesis. First, I summarise and synthesise findings from the three studies. I discuss contributions to knowledge and practice, followed by strengths and limitations. Finally, I consider ideas for future research and final concluding thoughts.

### 6.1 Summary and synthesis of findings

Findings from the three studies can be summarised as: the value of student participation, the value of careful implementation, and the value of physical activity.

Study one reported on the systematic involvement of ten students in a public school’s inauguration of positive education using participatory action research (PAR). The aim of the research was twofold. First, to explore if PAR had value for the school. Second, to explore if PAR had value for students who conducted it. Overall, results suggested that PAR indeed added value. The school benefited from a deeper understanding of student mental health and wellbeing, aiding in intervention fit. The school benefited from ‘the student voice’ communicating positive education concepts to the wider student body, laying the foundation for buy-in to its implementation. The school also gained from the aforementioned by utilising its own resources, rather than drawing on expensive external resources. PAR students themselves improved their Engagement and Self-efficacy, and enhanced their competencies such as communication skills. PAR enabled students to have a platform on which to express their own thoughts about wellbeing, and it helped to systematically gain input from their school community.

Study two systematically explored implementation factors further in the small-scale implementation of a positive education pilot program (PEPP) informed by the student led action research of study one. Although positive psychology interventions have been supported by the literature (e.g., Bolier et al., 2013; Sin & Lyubomirsky, 2009), what these interventions look like within the context of a school is unclear. Evaluation of *implementation* helps schools determine what is working or not, and provides evidence for the value of positive education. A guiding model was developed and intervention, provider,

recipient, organisational and contextual factors were examined using mixed methods. Findings revealed key factors to consider in full-scale implementation of positive education at this school, including recipient characteristics such as gender, the right fit between the intervention and the recipients, and the importance of input from multiple stakeholders. Findings also suggested that provider enthusiasm and understanding help to overcome a lack of training.

In light of these results, study three considered the recipient characteristic of gender further, examining the role of physical activity in the relationship between gender and mental health. Evidence for the benefit of physical activity in mental health, no matter your gender, was found. Findings also show physical activity may mediate gender and mental health associations, such that part of known gender differences in mental health could be attributed to adolescent girls engaging in less physical activity than adolescent boys. Findings provide a deeper insight into the mental health benefit of physical activity, and adds weight to the potential benefit of physical activity for both genders in positive education.

The three studies put an examination of factors in implementation at the centre of the 'doing' of positive education. There are growing calls for greater scrutiny of implementation and its context in positive education (Ciarrochi et al., 2016; Slemp et al., 2017); this series of studies advances this appeal.

## **6.2 Significance of the work: contributions to knowledge and practice**

This work has made some important contributions to knowledge and to practice. Critics of positive education have often questioned its lack of empirical evidence (Kristjánsson, 2012), with the area relying on a handful of case studies as evidence of educational impact (White, 2017). These studies have added to the evidence base of positive education.

The studies that make up this thesis can be characterised by their practical approach to positively impacting adolescent mental health. The environment in which it was undertaken contributed to the high ecological validity of this research. It was conducted under every-day time and resource constraints, but still produced practical

benefit for the school and for its participants. Following, the nexus of research and practice is discussed.

### **6.2.1    *The increased likelihood of effective programs***

There is a need to go beyond assessing the impact of positive education, and to consider factors that make it more or less successful, as well as the mechanisms involved (Slemp et al., 2017; Vella-Brodrick, 2013). This research explored implementation factors that the literature point to as having an impact on program effectiveness.

First, studies one and two demonstrated that stakeholder input allowed for empowerment and buy-in to the concept of positive education, increasing the likelihood of program success. Educational literature widely endorses shared decision-making, or stakeholder input, as an implementation factor leading to positive program outcomes (e.g., Levin, 2000; Mitra, 2012; Nordstrum et al., 2017). Study one detailed how PAR enabled students to contribute to the introduction of positive education at their school, underpinning its small-scale implementation in a positive education pilot program (PEPP). Study two identified how seeking feedback from teachers before and after the PEPP was thought to decrease resistance to change and increase motivation and commitment.

Second, the school gained valuable information from teachers, and gained contextual understanding of their students' wellbeing, to aid in intervention fit. The contribution of providers enables a better ecological fit for the program (Durlak, 1998), and students contributed their unique insights as experts in their own context. Context comprises the broader influences on mental health that exist outside individual thoughts, feelings and behaviours. The challenges young people face today are different to those of previous generations (Kibe & Boniwell, 2015), and the conditions in which they have been raised have changed significantly (Weissberg, Walberg, O'Brien, & Kuster, 2003). Today's challenges include a greater incidence of family break-ups, confusing media messages, cybersafety issues, easier access to drugs, and less time spent with parents due to increases in dual-career families (Noble & McGrath, 2013). Through PAR, students identified barriers and facilitators to their wellbeing in their own unique setting. It allowed the school to have a better understanding of students' lived experience in order to inform intervention selection for study two's PEPP.

Third, an evaluation of implementation may enable future implementation efforts to be more effective. Study two found the PEPP had little impact, and if the goal had been to show evidence for the program, then little would have been learned. However, an evaluation of its *implementation* suggested why that might have been. It emerged intervention fit with recipients was crucial. Recipient gender attitudes, teacher efficacy and stakeholder involvement were also found to potentially impact the effectiveness of the PEPP.

Fourth, study three indicated the potential benefit of a mental health program which incorporates physical activity for both genders. For females, it provides preliminary evidence that the link between mental health and physical activity is strong for both adolescent males and females in the Australian context. It also indicates part of the gender difference in mental health can be explained by female's lack of physical activity. For males, it provides further evidence of the mental health benefit of physical activity, which may hold less stigma than an overt mental health program. Adolescent males can experience a high level of stigma, and this may impact their willingness to engage in mental health initiatives (e.g., Chandra & Minkovitz, 2006).

### **6.2.2    *Accessibility of positive education***

A major barrier to the growth of positive education is inequality between schools (White, 2017). The expense of certain approaches to positive education has been discussed in section 1.7 above, yet few practical solutions have been tested. This research offers PAR, implementation evaluation, and physical activity as practical and cost-effective suggestions for potentially improving the quality of positive education in any school. Findings suggest that it is not necessarily the degree of resources available for positive education that may result in success, rather the engagement, fit, and buy-in from staff and students.

### **6.2.3    *The practical utility of involving stakeholders***

Studies one and two detailed substantial, beneficial, and practical feedback from stakeholders. For example, students helped identify the language that should be used in the student wellbeing and positive education context. It is thought that using language that is understood and that resonates within the school is an important factor in the implementation of positive education (Slomp et al., 2017). Students were also instrumental in the communication strategy, designing the logo and diary page, and presenting at

assemblies; allowing for their involvement and inclusion to be visible to the wider student body. Students gave practical feedback on interventions used in positive education, such as wanting less writing-based activities, and more active, group-based practices. Many students showed dissatisfaction with a particular intervention used in study two; the subject matter seemingly increased some participants' awareness to the negative, unintentionally causing them to feel greater distress, rather than providing benefit. As noted in section 1.5.1, even though in an ideal world, distress would be prevented by using a universal approach, students bring their own experiences and perspectives to an intervention, and what might seem harmless can indeed cause harm. Thus, the findings point to the importance of considering the student experience – both positive and negative – when considering the effects of preventative programs. Despite the evidence for MoodGYM's clinical effectiveness, real-world student advice seemed to take precedence and should be considered with more weight in the future. Involving young people ensures policies, services, and research, are relevant to young people as they are directed and informed by young people (Blanchard & Fava, 2017). Youth participation is seen to be a critical element in creating engaging and relevant mental health and wellbeing services (Burns & Birrell, 2014).

In addition to students, other stakeholders were consulted; teachers, parents, and the school. Teachers had beneficial input to the PEPP's content ahead of implementation, such as their suggestion for the inclusion of videos. They also gave valuable feedback after it had concluded, such as their indication that male students did not want to *appear* to be interested in positive education, but still participated. Parents gave their views on the importance of social and emotional learning, and their view of any impact of the PEPP on their child. The school, through numerous consultations and an in-depth interview with the deputy principal, had input into the PEPP, and provided insight after implementation. These inputs will lead to a better understanding of what effective positive education might look like at this school.

The feedback of students was valuable to their buy-in and the input of all stakeholders was valuable for intervention fit in future positive education efforts. Stakeholders should be involved in introducing positive education to schools.

#### 6.2.4 *A model for evaluating implementation of positive education*

This research has been one of the first attempts to thoroughly examine conditions and actions that impact the implementation, and by extension the likely effectiveness (Durlak & DuPre, 2008), of positive education. The process and frameworks used in this research can be generalised to guide implementation within other school-based contexts.

Study one outlined recipient/student involvement and how that may have impacted their attitudes toward the intervention, and intervention fit. Study two explored implementation further, finding several factors had importance over others. The study used a theoretically informed, practice-friendly model which drew heavily from important implementation factors identified by others (e.g., Blase, Van Dyke, Fixsen, and Bailey (2012); Durlak and DuPre (2008); Domitrovich et al. (2008); Fixsen, Naoom, Blase, and Friedman (2005); Pearson et al. (2015); Samdal and Rowling (2011) among others) as a heuristic framework for evaluating implementation. This model may be used or adapted in further research on the implementation of positive education. It may have utility for schools conducting a small-scale pilot, helping them to identify barriers and facilitators for future full-scale implementation efforts.

#### 6.2.5 *Elucidating the gender gap in mental health*

Females suffer more than men from internalising disorders such as depression and anxiety (Rosenfield & Mouzon, 2013), and if we are to understand gender differences in mental health in adulthood, we must understand developments that occur in adolescence (Hyde, Mezulis, & Abramson, 2008). Study three points to how physical activity may play a part in the gender difference in mental health. Explanatory pathways for girls' higher incidence of internalisation include historical gender roles, body image pressures (Shute, 2016), coping strategies (Hyde et al., 2008) and the simple reporting of symptoms (Piccinelli & Wilkinson, 2000). We explored a *behavioural* avenue (i.e., participation in physical activity) that schools can have substantial influence over.

Study three used mediation analyses to examine the influence of physical activity on the relationship between gender and mental health. As discussed in section 2.4.4, there are many who argue against the use of mediation analyses with cross-sectional data (e.g., Maxwell & Cole, 2007; Wu & Zumbo, 2007), but the present research shows physical activity did influence the association of gender and mental health. Findings show there is a

difference in mental health between genders that can be partially attributable to physical activity. Using gender as the predictor, the only bi-directional arrow in the mediation is the link between physical activity and mental health. That is, mental health cannot cause gender, and physical activity cannot cause gender. The causal direction in the association between mental health and physical activity cannot be determined with this data. It may be that individuals who do more physical activity experience better mental health, or it may be that individuals who experience better mental health tend to do more physical activity. The relationship may be mutually supportive. The mediational model used, with gender as a predictor, points to directionality, but we could not directly test for directionality with this data. We conclude that physical activity has value, as behaviour is more actionable. Behaviours, feelings and cognitions are all important in human functioning (Dobson & Block, 1988), and it is behaviour that is most able to be changed, especially in the school context.

Incorporating physical activity that is acceptable and relevant to adolescent females into school-based mental health and wellbeing efforts may help to close the gender gap in mental health.

#### **6.2.6    *The value of physical activity in positive education***

This research points to the potential value of physical activity in positive education. Until now, there has been a lack of discussion of this within the literature. There are some notable exceptions. For example, Kern et al. (2015) tested the PERMA multidimensional theory of wellbeing in adolescent males. Factor analyses recovered four of the five PERMA elements, and two ill-being factors (depression and anxiety) which were then explored further by examining cross-sectional associations with other mental health indicators including Physical Vitality (i.e. feeling fit and strong) and physical activity. They found sizable associations between Physical Vitality, and physical activity with positive mental health domains such as Positive Emotion and Accomplishment. Brunzell, Waters, and Stokes (2015) suggest that physical activity for children can serve as regulatory activities to address the dysregulated stress response of trauma-affected students. They give the example of the benefit from “brain breaks” which may be short exercise bursts on a stationary bike, a walk around the sport oval, sport drills, or adaptations of personal training circuits (p.4). Faulkner et al. (2015) support physical activity as an intervention in

the area of positive psychology, and offer suggestions for school students. Yet, physical activity as an intervention in positive education is an area yet to be fully developed.

Study three suggested the potential value of physical activity in positive education. Findings included the strong associations of physical activity with Engagement (being interested or involved; Fredricks et al., 2004) and Perseverance (persistence in reaching a goal; Pury, 2009). Engagement and perseverance are valued by educators. Engagement has been connected to positive behaviour and achievement at school (Appleton et al., 2008), and perseverance has been found to positively influence academic achievement over and above the impact of a student's background (Department for Education and Child Development, 2017). The latter source notes the potential benefits of developing perseverance for students, and that work is underway to determine an appropriate school-based intervention that builds it. The present research shows the promise of physical activity to enhance such an intervention for adolescents. Indeed, if physical activity is influential in adolescent mental health, and if females derive as much mental health benefit from it as males, then it points to the promise of physical activity being an impactful mental health intervention, as long as barriers for female participation are attended to.

### **6.3 Strengths and Limitations**

Findings, contributions to knowledge and practice of this research must be taken in the context of its methodological strengths and limitations.

A key strength of this research lies in its efforts to investigate the under-researched area of positive education, responding to a key criticism of it; being that it has largely ignored contextual issues. By involving students and examining implementation factors, this work acknowledges the importance of context in positive education. The mixed-method approach taken in these two studies also represents a considerable strength. Mixed methods combines the power of stories and the power of numbers to respectively allow for a deeper understanding, and to provide rationale for change (Pluye & Hong, 2014).

Another key strength of this research was in its ecological validity. External validity is often delineated into ecological validity (the extent to which research can be generalised to other settings), population validity (generalisability to other people) and historical



validity (generalisability over time). The research had real-world constraints that come with day-to-day life in publicly funded schools, addressing the perception outlined in section 1.7.6 that positive education, and research into it, has only been undertaken in the 'ideal' setting of well-resourced schools. Much of this positive education research has been conducted in a setting that lacks the mundane realism of real life for an Australian student, thus lacking ecological validity. Such research is more difficult to generalise to the wider population of adolescent students. A drawback of research with high ecological validity is the difficulty of proving true cause and effect. If people are studied in a natural, everyday setting then any number of factors may impact on findings. So while exact findings may not be applicable to other school settings, the methodology; namely student and school community involvement through participatory action research, and examination of implementation factors using our heuristic model; may be.

Most limitations have already been outlined in the three papers, for example, the nature of the data I worked with. To protect the privacy of adolescent students within the context of a public school, the DECD initially (2014) insisted on anonymous data collection. It was only after three years of conducting research at BHS that the DECD was open to re-identifiable data collection, and this did not benefit the current research. Despite collecting data across time, I could only conduct cross-sectional analyses, thus limiting the power I had to detect effects in the various studies. Saying this, a strength of study three was in its replication of analyses enabled by the collection of data over time.

Some methodological issues also warrant further discussion. There are limitations in relation to the representativeness of the data. While every effort was made by the school staff and by researchers to maximise the participation rate of questionnaires, the highest participation was in 2014 with 75.4% (Halliday, 2014). Assessing a proportion of the school population meant a limit to confidence in findings. For example, our data shows the proportion of students speaking a language other than English at home ranged from 13.9%-17.0%, however data collected from the school by the statutory authority showed it ranged between 8%-12% in the same years (Australian Curriculum Assessment and Reporting Authority, 2018). The ethical requirements of active consent may have led to potential selection bias. There was potential for the self-selection of the more engaged and conscientious students (and parents) in the sample, which may have impacted findings.

Much of the current research relies on self-reported data. These may be prone to biases such as those stemming from image management or from the need for social approval (Nederhof, 1985). Memory and mood can potentially bias wellbeing reports (Diener, 2000) but conventional self-report instruments have been found to be valid for subjective wellbeing (Sandvik, Diener, & Seidlitz, 1993). Physical activity measures can be affected by seasons, although this may be dependent on age. A study using the same physical activity measure as the current research (PAQ) suggested the completion of questionnaires during the summer months slightly reduced the standardized alpha for the Physical Activity Questionnaire for children (PAQ-C), but not for the PAQ-A adolescent measure (Janz et al., 2008).

Limitations on research resources resulted in the present author personally involved in collecting some data in studies one and two, which may have affected responses. Although all of this data collected was anonymous or de-identified, it was a weakness of the research.

While this study's ecological validity is considered a strength, the nature of the data restricts the external validity of findings; it being entirely conducted at a single school. Values, behaviours, and beliefs determined as appropriate in the current research arise from a middle-class, Australian perspective, thus may not be applicable in other contexts wishing to practise positive education. Cross-cultural factors' intersection with the implementation of positive education should be the focus of future research.

## **6.4 Future direction of research**

The limitations of this research have been noted above, yet findings from these studies provide a foundation of knowledge on which further study can be built.

### **6.4.1 Empirical evidence for impact of positive education**

Section 1.6.2 notes the lack of empirical evidence supporting positive education in practice. It also describes findings from the studies that do exist, suggesting enhancing wellbeing may help buffer against the decline of adolescent mental health during a school year. More empirical evidence using robust study designs is needed for the effectiveness of positive education to reduce negative factors such as depression, and increase positive

factors such as engagement and resilience; or prevent their respective inclines and declines during a school year.

#### **6.4.2 Evaluation of implementation in positive education**

The research provides one of the first comprehensive assessments of implementation within a positive education setting. Evaluation of implementation can help increase the effectiveness of future positive education, yet there are few tools with which to carry this out. There is a great need for the development of instruments for researchers and educators to measure implementation processes and outcomes (Ogden & Fixsen, 2014). Beyond evaluating implementation, positive education should identify *implementation strategies*. These are an integrated set of implementation interventions selected to address identified barriers to implementation success, and may include efforts to change behaviour at the provider or recipient level, such as team-based performance incentives, collective learning strategies, or community-engagement (Bauer et al., 2015).

#### **6.4.3 Gender and mental health**

Findings of study two suggest a gender difference in the attitudes of students toward positive education. Teachers indicated male students did not want to *appear* to be interested, yet still participated. While gender can account for “drastically different results” in terms of school-based mental health and wellbeing program success (Dawood, 2013, p. 962), there was no evidence of gender differences in the PEPP’s outcomes. Socially determined roles of masculinity may impact adolescent boys’ attitudes toward mental health initiatives (Chandra & Minkovitz, 2006), however further research is needed to explore complexities of current attitudes.

#### **6.4.4 Physical activity and mental health**

Future studies may consider the influence of physical activity on the link between gender and mental health over time, using identifiable data to allow for causal direction between physical activity and mental health to be inferred. It may be that the two influence one another. Future research may also examine how physical activity can be better incorporated into programs to support mental health and wellbeing, and how recipient characteristics moderate how students experience an intervention.

#### 6.4.5 The co-input of students and teachers

There is enormous opportunity for the co-input of teacher and students to benefit the implementation of positive education. *Teacher* involvement and buy-in carries importance, beyond that which is implied as a result of teacher training. Teachers have valuable expertise and their buy-in, fostered by genuine involvement in decision making, is an essential ingredient of effective school reform (Gosin et al., 2003).

There is increasing recognition of the need for a more collaborative approach to school-based change (Ciarrochi et al., 2016; Waters, White, & Murray, 2012). Further research should be undertaken to investigate the value of developing a partnership between teachers and students through shared stakeholder research. When students work with adults to make changes in the school, it reminds teachers and administrators that students possess unique knowledge and perspectives (Mitra & Gross, 2009). If pre-service teacher training in this domain is to be widely adopted as White (2016), Shute and Slee (2016) advocate, teacher and students' co-input in stakeholder research may help to deepen teachers' understanding of the adolescent mental health and wellbeing context at their school, helping to increase confidence in their own ability to teach positive education.

### 6.5 Conclusion

This research explored ways in which we might 'do' positive education better. It was a solution-focussed examination of implementation considerations in positive education. Findings show student involvement, careful implementation and physical activity might help the practice of positive education.

PAR allows for a contextual understanding of wellbeing, using the school's own resources, and benefitting those conducting it. Exploration of implementation helps negotiate real-world complexity and challenges in positive education. Physical activity has the potential to be a leading positive education intervention that may address many real-world considerations of positive education. Taken together, these findings have established a foundation for future investigation of all three mechanisms in the objective of 'doing' positive education better.





## References

### References

- Aarons, G. A. (2004). Mental health provider attitudes toward adoption of evidence-based practice: The evidence-based practice attitude scale. *Mental health services research, 6*(2), 61-74.
- Aarons, G. A., Green, A. E., & Miller, E. (2012). Researching readiness for implementation of evidence-based practice: A comprehensive review of the Evidence-Based Practice Attitude Scale (EBPAS). In B. Kelly & D. F. Perkins (Eds.), *Handbook of Implementation Science for Psychology in Education* (pp. 150-164). New York, NY: Cambridge University Press.
- Adelaide Graduate Centre. (2018). Publication Format. Retrieved from <https://www.adelaide.edu.au/graduatecentre/handbook/07-thesis/02-publication-format-thesis/>
- Adler, A. (2017a). Positive education: Educating for academic success and for a fulfilling life. *Papeles del psicólogo, 38*(1), 50-57. doi:10.23923/pap.psicol2017.2821
- Adler, A. (2017b). Well-Being and Academic Achievement: Towards a New Evidence-Based Educational Paradigm. In M. A. White, G. R. Slemp, & A. S. Murray (Eds.), *Future Directions in Well-Being: Education, Organizations and Policy* (pp. 203-208). Cham: Springer International Publishing.
- Allen, K.-A., Kern, M. L., Vella-Brodrick, D. A., & Waters, L. (2018). Understanding the Priorities of Australian Secondary Schools Through an Analysis of Their Mission and Vision Statements. *Educational Administration Quarterly, 54*(2), 249-274. doi:10.1177/0013161x18758655
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders. DSM-IV* (4th ed.). Washington DC.
- Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools, 45*(5), 369-386. doi:10.1002/pits.20303
- Armstrong, N., & Welsman, J. R. (2006). The physical activity patterns of European youth with reference to methods of assessment. *Sports Medicine, 36*(12), 1067-1086. doi:10.2165/00007256-200636120-00005
- Armstrong, T., Bauman, A. E., & Davies, J. (2000). *Physical activity patterns of Australian adults: Results of the 1999 National Physical Activity Survey*. Australian Institute of Health and Welfare. Canberra, ACT.
- Australian Bureau of Statistics. (2009). Mental health. *Australian Social Trends, March, 2009*.
- Australian Bureau of Statistics. (2013). Australian Health Survey: Physical Activity, 2011-12. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4364.0.55.004main+features12011-12>
- Australian Curriculum Assessment and Reporting Authority. (2012). *Guide to understanding ICSEA values*. Sydney, Australia: ACARA.
- Australian Curriculum Assessment and Reporting Authority. (2015). School Profile Dataset *National Report on Schooling in Australia*. Sydney, Australia: ACARA.
- Australian Curriculum Assessment and Reporting Authority. (2018). School Profile: Blackwood High School.

- Australian Institute of Health and Welfare. (2016). *Leading causes of death 2011-2013* (Vol. 2016).
- Australian National University. (2014). MoodGYM. Retrieved from <https://moodgym.anu.edu.au>
- Azevedo, M. R., Araújo, C. L. P., Reichert, F. F., Siqueira, F. V., da Silva, M. C., & Hallal, P. C. (2007). Gender differences in leisure-time physical activity. *International Journal of Public Health*, 52(1), 8-15. doi:10.1007/s00038-006-5062-1
- Bailey, A. P., Hetrick, S. E., Rosenbaum, S., Purcell, R., & Parker, A. G. (2017). Treating depression with physical activity in adolescents and young adults: a systematic review and meta-analysis of randomised controlled trials. *Psychological Medicine*, 48(7), 1068-1083. doi:10.1017/S0033291717002653
- Bambara, L. M., Nonnemacher, S., & Kern, L. (2009). Sustaining School-Based Individualized Positive Behavior Support: Perceived Barriers and Enablers. *Journal of Positive Behavior Interventions*, 11(3), 161-176. doi:10.1177/1098300708330878
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173.
- Barry, M. M., Clarke, A. M., Jenkins, R., & Patel, V. (2013). A systematic review of the effectiveness of mental health promotion interventions for young people in low and middle income countries. *BMC Public Health*, 13(1), 835. doi:10.1186/1471-2458-13-835
- Bauer, M. S., Damschroder, L., Hagedorn, H., Smith, J., & Kilbourne, A. M. (2015). An introduction to implementation science for the non-specialist. *BMC Psychology*, 3(1), 32. doi:10.1186/s40359-015-0089-9
- Baum, F., MacDougall, C., & Smith, D. (2006). Participatory action research. *Journal of Epidemiology and Community Health*, 60(10), 854.
- Bauman, A., Bull, F., Chey, T., Craig, C. L., Ainsworth, B. E., Sallis, J. F., . . . Pratt, M. (2009). The international prevalence study on physical activity: results from 20 countries. *International Journal of Behavioral Nutrition and Physical Activity*, 6(1), 21.
- Ben-Shachar, T., Kor, A., Mikulincer, M., & Shoshani, A. (2010). *Maytiv Curriculum*. Maytiv Center for the Study and Application of Positive Psychology, School of Psychology, Interdisciplinary Center Herzliya. Israel.
- Bennefield, Z. (2018). School and Family Correlates of Positive Affect in a Nationally Representative Sample of US Adolescents. *Child and Adolescent Social Work Journal*, 1-8. doi:10.1007/s10560-018-0539-3
- Berg, M., Coman, E., & Schensul, J. J. (2009). Youth action research for prevention: A multi-level intervention designed to increase efficacy and empowerment among urban youth. *American Journal of Community Psychology*, 43(3-4), 345-359.
- Bergman, M. M., & Scott, J. (2001). Young adolescents' wellbeing and health-risk behaviours: Gender and socio-economic differences. *Journal of Adolescence*, 24(2), 183-197.
- Berkel, C., Mauricio, A. M., Schoenfelder, E., & Sandler, I. N. (2011). Putting the pieces together: An integrated model of program implementation. *Prevention Science*, 12(1), 23-33. doi:10.1007/s11121-010-0186-1
- Biddle, S. J., & Asare, M. (2011). Physical activity and mental health in children and adolescents: a review of reviews. *British Journal of Sports Medicine*. doi:10.1136/bjsports-2011-090185



- Biddle, S. J., & Ekkekakis, P. (2005). Physically active lifestyles and well-being. In F. A. Huppert, N. Baylis, & B. Keverne (Eds.), *The Science of Well-Being* (pp. 140-168). New York: Oxford University Press.
- Biddle, S. J., & Mutrie, N. (2007). *Psychology of physical activity: Determinants, well-being and interventions*: Routledge.
- Biddle, S. J., Whitehead, S. H., O'Donovan, T. M., & Nevill, M. E. (2005). Correlates of participation in physical activity for adolescent girls: a systematic review of recent literature. *Journal of Physical Activity and Health*, 2(4), 423-434.
- Blackwood High School. (2012). *Strategic Directions 2013-2018*. Adelaide, Australia: Blackwood High School.
- Blakemore, S.-J., & Mills, K. L. (2014). Is Adolescence a Sensitive Period for Sociocultural Processing? *Annual Review of Psychology*, 65(1), 187-207. doi:10.1146/annurev-psych-010213-115202
- Blanchard, M., & Fava, N. (2017). Co-designing New Solutions to Support Young People's Mental Health and Wellbeing. In M. A. White, G. R. Slemp, & A. S. Murray (Eds.), *Future Directions in Well-Being: Education, Organizations and Policy* (pp. 197-201). Cham: Springer International Publishing.
- 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), 119.
- Boniwell, I., Osin, E. N., & Martinez, C. (2016). Teaching happiness at school: Non-randomised controlled mixed-methods feasibility study on the effectiveness of Personal Well-Being Lessons. *Journal of Positive Psychology*, 11(1), 85-98. doi:10.1080/17439760.2015.1025422
- Boniwell, I., & Ryan, L. (2012). *Personal well-being lessons for secondary schools: Positive psychology in action for 11 to 14 year olds*: McGraw-Hill Education (UK).
- Booth-Kewley, S., Larson, G. E., & Miyoshi, D. K. (2007). Social desirability effects on computerized and paper-and-pencil questionnaires. *Computers in Human Behavior*, 23(1), 463-477. doi:<https://doi.org/10.1016/j.chb.2004.10.020>
- Bor, W., Dean, A. J., Najman, J., & Hayatbakhsh, R. (2014). Are child and adolescent mental health problems increasing in the 21st century? A systematic review. *Australian and New Zealand Journal of Psychiatry*, 0004867414533834.
- Bowen, S., & Zwi, A. B. (2005). Pathways to "Evidence-Informed" Policy and Practice: A Framework for Action. *PLoS Medicine*, 2(7), e166. doi:10.1371/journal.pmed.0020166
- Boyd, R., MacNeill, N., & Sullivan, G. (2006). Relational pedagogy: putting balance back into students' learning. *Curriculum and Leadership Journal*, 4(13).
- Boyle, M. (2012). *Research in Action: A Guide to Best Practice in Participatory Action Research*. Canberra: Department of Families, Housing, Community Services and Indigenous Affairs.
- Brand, S., Kalak, N., Gerber, M., Clough, P. J., Lemola, S., Sadeghi Bahmani, D., . . . Holsboer-Trachsler, E. (2017). During early to mid adolescence, moderate to vigorous physical activity is associated with restoring sleep, psychological functioning, mental toughness and male gender. *Journal of Sports Sciences*, 35(5), 426-434. doi:10.1080/02640414.2016.1167936
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.

- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32(7), 513.
- Brunzell, T., Waters, L., & Stokes, H. (2015). Teaching with strengths in trauma-affected students: A new approach to healing and growth in the classroom. *American Journal of Orthopsychiatry*, 85(1), 3-9. doi:10.1037/ort0000048
- Brydon-Miller, M. (1997). Participatory action research: Psychology and social change. *Journal of Social Issues*, 53(4), 657-666.
- Burns, J., & Birrell, E. (2014). Enhancing early engagement with mental health services by young people. *Psychology Research and Behavior Management*, 7, 303-312. doi:10.2147/PRBM.S49151
- Burns, J., Davenport, T., Ricci, C., Birrell, E., Blanchard, M., & Hickie, I. (2014). It's one's smart'solution: Using new and emerging technologies to support the mental health and wellbeing of young men.
- Bushe, G. R. (2011). Appreciative inquiry: Theory and critique. In D. Boje, B. Burnes, & J. Hassard (Eds.), *The Routledge Companion to Organizational Change* (pp. 87-103). Oxford, UK: Routledge.
- Butler, J., & Kern, M. L. (2016). The PERMA-Profiler: A Brief Multidimensional Measure of Flourishing. *International Journal of Wellbeing*, 6(3), 1-48. doi:doi:10.5502/ijw.v6i3.1
- Calear, A. L., Christensen, H., Mackinnon, A., Griffiths, K. M., & O'Kearney, R. (2009). The YouthMood Project: a cluster randomized controlled trial of an online cognitive behavioral program with adolescents. *Journal of Consulting and Clinical Psychology*, 77(6), 1021.
- Caprara, G. V., Barbaranelli, C., Pastorelli, C., Bandura, A., & Zimbardo, P. G. (2000). Prosocial Foundations of Children's Academic Achievement. *Psychological Science*, 11(4), 302-306.
- Cargo, M., & Mercer, S. L. (2008). The value and challenges of participatory research: Strengthening its practice. *Annual Review of Public Health*, 29, 325-350.
- Carpenter, C., & Suto, M. (2008). *Qualitative research for occupational and physical therapists: A practical guide*. Oxford, UK: Blackwell.
- Casellas-Grau, A., Font, A., & Vives, J. (2014). Positive psychology interventions in breast cancer. A systematic review. *Psycho-Oncology*, 23(1), 9-19. doi:10.1002/pon.3353
- Cerin, E., Leslie, E., Sugiyama, T., & Owen, N. (2009). Associations of multiple physical activity domains with mental well-being. *Mental Health and Physical Activity*, 2(2), 55-64. doi:<https://doi.org/10.1016/j.mhpa.2009.09.004>
- Chandra, A., & Minkovitz, C. S. (2006). Stigma starts early: Gender differences in teen willingness to use mental health services. *Journal of Adolescent Health*, 38(6), 754.e751-754.e758. doi:10.1016/j.jadohealth.2005.08.011
- Chaves, C., & Tamés, E. (2017). Advances and Challenges in Positive Education. In M. A. White, G. R. Slep, & A. S. Murray (Eds.), *Future Directions in Well-Being: Education, Organizations and Policy* (pp. 209-212). Cham: Springer International Publishing.
- Checkoway, B. (2011). What is youth participation? *Children and Youth Services Review*, 33(2), 340-345. doi:<http://dx.doi.org/10.1016/j.childyouth.2010.09.017>
- Christensen, H., Calear, A., Tait, R., Gosling, J., Griffiths, K., & Murray, K. (2011). *School based intervention programs and shared care collaborative models targeting the prevention of or early intervention in child and adolescent mental health problems: An Evidence Check review brokered by the Sax Institute for the NSW Ministry of Health October 2011*.

- Christiansen, L. B., Lund-Cramer, P., Brondeel, R., Smedegaard, S., Holt, A.-D., & Skovgaard, T. (2018). Improving children's physical self-perception through a school-based physical activity intervention: The Move for Well-being in School study. *Mental Health and Physical Activity*, 14, 31-38.  
doi:<https://doi.org/10.1016/j.mhpa.2017.12.005>
- Ciarrochi, J., Atkins, P. W. B., Hayes, L. L., Sahdra, B. K., & Parker, P. (2016). Contextual positive psychology: Policy recommendations for implementing positive psychology into schools. *Frontiers in Psychology*, 7(OCT). doi:10.3389/fpsyg.2016.01561
- Cohen, J. W. (1988). *Statistical power analysis for the behavioral sciences (2nd edn)*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cole, P., Mahar, S., & Vindurampulle, O. (2006a). *Understanding Year 9 Students: A Theoretical Perspective*. Melbourne: Department of Education & Training.
- Cole, P., Mahar, S., & Vindurampulle, O. (2006b). *Understanding Year 9 Students: Implications for Policy and Practice*. Melbourne: Department of Education & Training.
- Colley, R. C., Garriguet, D., Janssen, I., Craig, C. L., Clarke, J., & Tremblay, M. S. (2011). Physical activity of Canadian children and youth: Accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Health Reports*, 22(1), 15-23.
- Conoley, C. W., Conoley, J. C., Spaventa-Vancil, K. Z., & Lee, A. N. (2014). Positive psychology in schools: Good ideas are never enough. In M. J. Furlong, R. Gilman, & E. S. Huebner (Eds.), *Handbook of Positive Psychology in Schools* (2nd ed.). New York, NY: Routledge.
- Cook, C. R., Frye, M., Slemrod, T., Lyon, A. R., Renshaw, T. L., & Zhang, Y. (2015). An integrated approach to universal prevention: Independent and combined Effects of PBIS and SEL on youths' mental health. *School Psychology Quarterly*, 30(2), 166-183.  
doi:10.1037/spq0000102
- Corder, K., Sharp, S. J., Atkin, A. J., Griffin, S. J., Jones, A. P., Ekelund, U., & van Sluijs, E. M. F. (2015). Change in objectively measured physical activity during the transition to adolescence. *British Journal of Sports Medicine*, 49(11), 730-736.  
doi:10.1136/bjsports-2013-093190
- Couper, M. P., Traugott, M. W., & Lamias, M. J. (2001). Web Survey Design and Administration. *Public Opinion Quarterly*, 65(2), 230-253. doi:10.1086/322199
- Crane, P., & O'Regan, M. (2010). *On PAR: Using Participatory Action Research to Improve Early Intervention*. Retrieved from Canberra:
- Crivello, G., Camfield, L., & Woodhead, M. (2009). How Can Children Tell Us About Their Wellbeing? Exploring the Potential of Participatory Research Approaches within Young Lives. *Social Indicators Research*, 90(1), 51-72.
- Cronin, A., Alexander, V. D., Fielding, J., Moran-Ellis, J., & Thomas, H. (2008). The analytic integration of qualitative data sources. In P. Alasuutari, L. Bickman, & J. Brannen (Eds.), *The Sage handbook of social research methods* (pp. 572-584). London, UK: Sage.
- Cross, D. (2016). Friendly Schools. Retrieved from <http://friendlyschools.com.au/fsp/>
- Daley, A. (2008). Exercise and depression: A review of reviews. *Journal of Clinical Psychology in Medical Settings*, 15(2), 140-147. doi:10.1007/s10880-008-9105-z
- Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: a

- consolidated framework for advancing implementation science. *Implementation Science*, 4(1), 50. doi:10.1186/1748-5908-4-50
- Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control? *Clinical Psychology Review*, 18(1), 23-45. doi:[http://dx.doi.org/10.1016/S0272-7358\(97\)00043-3](http://dx.doi.org/10.1016/S0272-7358(97)00043-3)
- Danner, D. D., Snowdon, D. A., & Friesen, W. V. (2001). Positive Emotions in Early Life and Longevity: Findings from the nun study. *Journal of Personality and Social Psychology*, 80(5), 804.
- Das, J. K., Salam, R. A., Lassi, Z. S., Khan, M. N., Mahmood, W., Patel, V., & Bhutta, Z. A. (2016). Interventions for Adolescent Mental Health: An Overview of Systematic Reviews. *Journal of Adolescent Health*, 59(4, Supplement), S49-S60. doi:<http://dx.doi.org/10.1016/j.jadohealth.2016.06.020>
- Davidson, J. R., & Connor, K. M. (2015). *Connor-Davidson Resilience Scale (CD-RISC) Manual*.
- Dawood, R. (2013). Positive psychology in school-based psychological intervention: a study of the evidence-base. *The European Journal of Social & Behavioural Sciences*, 5(2), 954.
- Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of Happiness Studies*, 9(1), 1-11.
- Department for Education and Child Development. (2013). *Strategic Plan 2014-2017*. Adelaide, Australia: Government of South Australia.
- Department for Education and Child Development. (2017). *Results from the 2016 wellbeing and engagement survey: What young people have told us* Retrieved from Adelaide, SA:
- Department of Education and Child Development. (2015). *Involve me: An introduction to effective youth participation*. South Australia.
- DeSimone, J. A., Harms, P. D., & DeSimone, A. J. (2015). Best practice recommendations for data screening. *Journal of Organizational Behavior*, 36(2), 171-181. doi:doi:10.1002/job.1962
- Diener, E. (2000). Subjective Well-Being: The science of happiness and a proposal for a national index. *American Psychologist*, 55(1), 34.
- Diener, E., & Chan, M. Y. (2011). Happy people live longer: Subjective well-being contributes to health and longevity. *Applied Psychology: Health and Well-Being*, 3(1), 1-43.
- Diener, E., & Seligman, M. E. P. (2002). Very happy people. *Psychological Science*, 13(1), 81-84.
- Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D.-w., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, 97(2), 143-156.
- Disabato, D. (2016). The double standard against cross-sectional mediation. Retrieved from <http://www.daviddisabato.com/blog/2016/5/22/the-double-standard-against-cross-sectional-mediation>
- Dix, K. L., Slee, P. T., Lawson, M. J., & Keeves, J. P. (2012). Implementation quality of whole-school mental health promotion and students' academic performance. *Child and Adolescent Mental Health*, 17(1), 45-51. doi:doi:10.1111/j.1475-3588.2011.00608.x
- Dobson, K. S., & Block, L. (1988). Historical and philosophical bases of cognitive behavioural theories. *Handbook of Cognitive Behavioural Therapies*: Guilford Press, London.
- Dobson, K. S., Hollon, S. D., Dimidjian, S., Schmalings, K. B., Kohlenberg, R. J., Gallop, R. J., . . . Jacobson, N. S. (2008). Randomized Trial of Behavioral Activation, Cognitive Therapy,

- and Antidepressant Medication in the Prevention of Relapse and Recurrence in Major Depression. *Journal of Consulting and Clinical Psychology*, 76(3), 468.
- Dodd, S. J., & Savage, A. (2016). Evidence-Informed Social Work Practice: Oxford University Press.
- Dodge, R., Daly, A. P., Huyton, J., & Sanders, L. D. (2012). The challenge of defining wellbeing. *International Journal of Wellbeing*, 2(3).
- Domitrovich, C. E., Bradshaw, C. P., Poduska, J. M., Hoagwood, K., Buckley, J. A., Olin, S., . . . Jalongo, N. S. (2008). Maximizing the Implementation Quality of Evidence-Based Preventive Interventions in Schools: A Conceptual Framework. *Advances in School Mental Health Promotion*, 1(3), 6-28. doi:10.1080/1754730X.2008.9715730
- Domitrovich, C. E., Durlak, J. A., Staley, K. C., & Weissberg, R. P. (2017). Social-Emotional Competence: An Essential Factor for Promoting Positive Adjustment and Reducing Risk in School Children. *Child Development*, 88(2), 408-416. doi:doi:10.1111/cdev.12739
- Donaldson, A., & Finch, C. F. (2013). Applying implementation science to sports injury prevention. *British Journal of Sports Medicine*, 47(8), 473-475.
- 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. doi:10.1080/17439760.2014.943801
- Durlak, J. A. (1998). Why program implementation is important. *Journal of Prevention & Intervention in the community*, 17(2), 5-18.
- Durlak, J. A. (2013). *The importance of quality implementation for research, practice, and policy*. Retrieved from
- 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(3-4), 327-350.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions. *Child Development*, 82(1), 405-432.
- Eccles, M. P., & Mittman, B. S. (2006). Welcome to implementation science. *Implementation Science*, 1(1), 1-3.
- Eckersley, R. (2011). A new narrative of young people's health and well-being. *Journal of Youth Studies*, 14(5), 627-638.
- Efron, B., & Tibshirani, R. J. (1994). *An introduction to the bootstrap*: CRC Press LLC.
- Eime, R. M., Harvey, J. T., Sawyer, N. A., Craike, M. J., Symons, C. M., Polman, R. C. J., & Payne, W. R. (2013). Understanding the Contexts of Adolescent Female Participation in Sport and Physical Activity. *Research Quarterly for Exercise and Sport*, 84(2), 157-166. doi:10.1080/02701367.2013.784846
- Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: informing development of a conceptual model of health through sport. *International Journal of Behavioral Nutrition & Physical Activity*, 10(1).
- Eiraldi, R., Wolk, C. B., Locke, J., & Beidas, R. (2015). Clearing hurdles: the challenges of implementation of mental health evidence-based practices in under-resourced schools. *Advances in School Mental Health Promotion*, 8(3), 124-140. doi:10.1080/1754730X.2015.1037848

- Eisenberg, D., Downs, M. F., Golberstein, E., & Zivin, K. (2009). Stigma and Help Seeking for Mental Health Among College Students. *Medical Care Research and Review*, 66(5), 522-541. doi:10.1177/1077558709335173
- Ekkekakis, P., & Petruzzello, S. J. (1999). Acute Aerobic Exercise and Affect. *Sports Medicine*, 28(5), 337-347. doi:10.2165/00007256-199928050-00005
- Elias, M. J., Zins, J. E., Weissberg, M. T., Greenburg, N. M., Haynes, N. M., Kessler, R., . . . Shriver, T. P. (1997). *Promoting social and emotional learning: Guidelines for educators*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Eliot, L. (2009). *Pink brain, blue brain : how small differences grow into troublesome gaps- and what we can do about it*. New York, NY: Houghton Mifflin Harcourt.
- Englar-Carlson, M., & Kiselica, M. S. (2011). Establishing Rapport with Boys in Individual Counseling and Psychotherapy: A Male-Friendly Perspective *Counseling Troubled Boys* (pp. 79-96): Routledge.
- English, C. (2017). Toward sport reform: hegemonic masculinity and reconceptualizing competition. *Journal of the Philosophy of Sport*, 44(2), 183-198. doi:10.1080/00948705.2017.1300538
- Evans, C., Margison, F., & Barkham, M. (1998). The contribution of reliable and clinically significant change methods to evidence-based mental health. *Evidence Based Mental Health*, 1(3), 70-72.
- Fan, X., Miller, B. C., Park, K.-E., Winward, B. W., Christensen, M., Grotevant, H. D., & Tai, R. H. (2006). An exploratory study about inaccuracy and invalidity in adolescent self-report surveys. *Field Methods*, 18(3), 223-244.
- Faulkner, G., Hefferon, K., & Mutrie, N. (2015). Putting Positive Psychology Into Motion Through Physical Activity *Positive Psychology in Practice* (pp. 207-222): John Wiley & Sons, Inc.
- Ferrari, A. J., Charlson, F. J., Norman, R. E., Patten, S. B., Freedman, G., Murray, C. J. L., . . . Whiteford, H. A. (2013). Burden of Depressive Disorders by Country, Sex, Age, and Year: Findings from the Global Burden of Disease Study 2010. *PLoS Medicine*, 10(11), e1001547. doi:10.1371/journal.pmed.1001547
- Finch, L., Hargrave, R., Nicholls, J., & van Vliet, A. (2014). *Measure what you treasure*. London, England: New Philanthropy Capital.
- Fitzgerald, R. (2018). European Social Survey. Retrieved from <https://www.europeansocialsurvey.org/>
- Fixsen, D. L., Naoom, S. F., Blase, K. A., & Friedman, R. M. (2005). *Implementation research: a synthesis of the literature*. Retrieved from Tampa, FL: <http://www.popline.org/node/266329>
- Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231).
- Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts, and theory. *European Psychologist*, 18(1), 12-23. doi:10.1027/1016-9040/a000124
- Flicker, S. (2008). Who Benefits From Community-Based Participatory Research? A Case Study of the Positive Youth Project. *Health Education & Behavior*, 35(1), 70-86. doi:10.1177/1090198105285927



- Forgeard, M. J., Jayawickreme, E., Kern, M. L., & Seligman, M. E. P. (2011). Doing the right thing: Measuring wellbeing for public policy. *International Journal of Wellbeing*, 1(1).
- Forman, S. G., Olin, S. S., Hoagwood, K. E., Crowe, M., & Saka, N. (2008). Evidence-Based Interventions in Schools: Developers' Views of Implementation Barriers and Facilitators. *School Mental Health*, 1(1), 26. doi:10.1007/s12310-008-9002-5
- Forman, S. G., Shapiro, E. S., Coddling, R. S., Gonzales, J. E., Reddy, L. A., Rosenfield, S. A., . . . Stoiber, K. C. (2013). Implementation science and school psychology. *School Psychology Quarterly*, 28(2), 77.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School Engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59-109.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218-226. doi:10.1037/0003-066X.56.3.218
- Fredrickson, B. L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition and Emotion*, 19(3), 313-332. doi:10.1080/02699930441000238
- French-Bravo, M., & Crow, G. (2015). Shared governance: The role of buy-in in bringing about change. *OJIN: The Online Journal of Issues in Nursing*, 20(2).
- Friedrich, A. A., Mendez, L. M. R., & Mihalas, S. T. (2010). Gender as a factor in school-based mental health service delivery. *School Psychology Review*, 39(1), 122.
- Fröjd, S. A., Nissinen, E. S., Pelkonen, M. U., Marttunen, M. J., Koivisto, A.-M., & Kaltiala-Heino, R. (2008). Depression and school performance in middle adolescent boys and girls. *Journal of Adolescence*, 31(4), 485-498.
- Furlong, M. J., Gilman, R., & Huebner, E. S. (2014). *Handbook of Positive Psychology in Schools* (2nd ed.). New York, NY: Routledge.
- Gable, S. L., & Haidt, J. (2005). What (and Why) Is Positive Psychology? *Review of General Psychology*, 9(2), 103.
- Gartlehner, G., Hansen, R. A., Nissman, D., Lohr, K. N., & Carey, T. S. (2006). Criteria for distinguishing effectiveness from efficacy trials in systematic reviews.
- Geelong Grammar School. (2018). Timbertop. Retrieved from <https://www.ggs.vic.edu.au/School/Campuses/timbertop>
- Gerber, M., Kalak, N., Lemola, S., Clough, P. J., Pühse, U., Elliot, C., . . . Brand, S. (2012). Adolescents' exercise and physical activity are associated with mental toughness. *Mental Health and Physical Activity*, 5(1), 35-42. doi:<https://doi.org/10.1016/j.mhpa.2012.02.004>
- Gill, S. (2009). *Education for well-being. Conceptual framework, principles and approaches*.
- Gillham, J. E., Brunwasser, S. M., & Freres, D. R. (2008). Preventing depression in early adolescence: The Penn Resiliency Program. In J. R. Z. Abela & B. L. Hankin (Eds.), *Handbook of depression in children and adolescents* (pp. 309-332). New York, USA: Guilford Press.
- Gillham, J. E., Jaycox, L., Reivich, K., Seligman, M. E. P., & Silver, T. (1990). The Penn Resiliency Program. *Unpublished manual, University of Pennsylvania, Philadelphia*.
- Gillham, J. E., Reivich, K. J., Freres, D. R., Lascher, M., Litzinger, S., Shatté, A., & Seligman, M. E. P. (2006). School-based prevention of depression and anxiety symptoms in early adolescence: A pilot of a parent intervention component. *School Psychology Quarterly*, 21(3), 323.

- Gillis, A., & Jackson, W. (2002). *Research for Nurses: Methods and interpretation*. Philadelphia: FA Davis Company.
- Gilman, R., Huebner, E. S., & Furlong, M. J. (2014). Toward a Science and Practice of Positive Psychology in Schools. In M. J. Furlong, R. Gilman, & E. S. Huebner (Eds.), *Handbook of Positive Psychology in Schools* (2nd ed.). New York, NY: Routledge.
- Goldburg, P. (2008). Teaching religion in Australian schools. *Numen*, 55(2), 241-271.
- Gosin, M., Dustman, P., Drapeau, A., & Harthun, M. (2003). Participatory action research: Creating an effective prevention curriculum for adolescents in the Southwestern US. *Health Education Research*, 18(3), 363-379.
- Graetz, B. (2016). Student mental health programs: Current challenges and future opportunities. In R. H. Shute & P. T. Slee (Eds.), *Mental Health and Wellbeing Through Schools: The Way Forward* (pp. 3-12). Oxon, UK: Routledge.
- Green, S. (2014). Positive Education: An Australian Perspective. In M. J. Furlong, R. Gilman, & E. S. Huebner (Eds.), *Handbook of Positive Psychology in Schools: Second Edition* (pp. 401-415). New York, NY: Routledge.
- Green, S., Oades, L., & Robinson, P. (2011). Positive Education: Creating flourishing students, staff and schools. *InPsych*, 33.
- Greene, J. A. (2015). Serious challenges require serious scholarship: Integrating implementation science into the scholarly discourse. *Contemporary Educational Psychology*, 40, 112-120. doi:<http://dx.doi.org/10.1016/j.cedpsych.2014.10.007>
- Halliday, A. J. (2014). *Understanding wellbeing: a cross-sectional study of physical health behaviours, mental illness and wellbeing in adolescents*. University of Adelaide. Adelaide.
- Halliday, A. J., Kern, M. L., Garrett, D. K., & Turnbull, D. A. (2017a). The student voice in wellbeing: A case study of participatory action research in positive education. *Educational Action Research*. doi:10.1080/09650792.2018.1436079
- Halliday, A. J., Kern, M. L., Garrett, D. K., & Turnbull, D. A. (2017b). *Understanding factors affecting the implementation of Positive Education: An Australian case study*. Manuscript in preparation.
- Halliday, A. J., Kern, M. L., Garrett, D. K., & Turnbull, D. A. (2018). The student voice in wellbeing: a case study of participatory action research in positive education. *Educational Action Research*, 1-24. doi:10.1080/09650792.2018.1436079
- Haraldsson, K. S., Lindgren, E.-C. M., Fridlund, B. G. A., Baigi, A. M. A. E., Lydell, M. C., & Marklund, B. R. G. (2008). Evaluation of a school-based health promotion programme for adolescents aged 12–15 years with focus on well-being related to stress. *Public Health*, 122(1), 25-33. doi:<http://dx.doi.org/10.1016/j.puhe.2007.04.016>
- Hart, K. E., & Sasso, T. (2011). Mapping the contours of contemporary positive psychology. *Canadian Psychology/Psychologie Canadienne*, 52(2), 82.
- Hart, R. A. (1992). *Children's participation: From tokenism to citizenship*. UNICEF Innocenti Research Centre. Florence, Italy.
- Hart, R. A. (2008). Stepping back from 'The ladder': Reflections on a model of participatory work with children. In A. Ried, B. B. Jensen, J. Nikel, & V. Simovska (Eds.), *Participation and learning: developing perspectives on education and the environment, health and sustainability* (pp. 19-31).



- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 76(4), 408-420.  
doi:10.1080/03637750903310360
- Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling*. White paper. Retrieved from <http://www.afhayes.com/public/process2012.pdf>
- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Publications.
- Hazzard, B., & Power, K.-A. (2011). *Collaborative Inquiry: A facilitator's guide*. Retrieved from Ontario, Canada: London Region Professional Network:  
[http://misalondon.ca/PDF/collabpdfs/Collaborative Inquiry Guide 2011.pdf](http://misalondon.ca/PDF/collabpdfs/Collaborative_Inquiry_Guide_2011.pdf)
- Head, B. W. (2011). Why not ask them? Mapping and promoting youth participation. *Children and Youth Services Review*, 33(4), 541-547.  
doi:<http://dx.doi.org/10.1016/j.childyouth.2010.05.015>
- Hefferon, K., Murphy, H., McLeod, J., Mutrie, N., & Campbell, A. (2013). Understanding barriers to exercise implementation 5-year post-breast cancer diagnosis: a large-scale qualitative study. *Health Education Research*, 28(5), 843-856.  
doi:10.1093/her/cyt083
- Hefferon, K., & Mutrie, N. (2012). Physical activity as a “stellar” positive psychology intervention *Oxford handbook of exercise psychology* (pp. 117-128).
- Held, B. S. (2004). The negative side of positive psychology. *Journal of humanistic psychology*, 44(1), 9-46.
- Hoare, E., Milton, K., Foster, C., & Allender, S. (2016). The associations between sedentary behaviour and mental health among adolescents: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 13(1). doi:10.1186/s12966-016-0432-4
- Hobbs, T., & Ford, T. (2012). Measuring child wellbeing in Schools: How robust outcome data may inform the selection, design, and implementation of evidence based programs. In B. Kelly & D. F. Perkins (Eds.), *Handbook of Implementation Science for Psychology in Education* (pp. 423-442). New York, NY: Cambridge University Press.
- Holkup, P. A., Tripp-Reimer, T., Salois, E. M., & Weinert, C. (2004). Community-based Participatory Research: An Approach to Intervention Research With a Native American Community. *ANS. Advances in nursing science*, 27(3), 162-175.
- Hone, L. C., Jarden, A., Schofield, G. M., & Duncan, S. (2014). Measuring flourishing: The impact of operational definitions on the prevalence of high levels of wellbeing. *International Journal of Wellbeing*, 4(1).
- Howell, A. J. (2009). Flourishing: Achievement-related correlates of students’ well-being. *The Journal of Positive Psychology*, 4(1), 1-13.
- Huppert, F. A. (2004). A Population Approach to Positive Psychology: The Potential for Population Interventions to Promote Well-Being and Prevent Disorder. In P. A. Linley & S. Joseph (Eds.), *Positive Psychology in Practice* (pp. 693-712). Hoboken, NJ: John Wiley & Sons.
- Huppert, F. A. (2014). The state of well-being science: concepts, measures, interventions and policies. In F. Huppert & C. L. Cooper (Eds.), *Interventions and Policies to Enhance Well-being* (pp. 1-50). Oxford, UK: Wiley-Blackwell.
- Huppert, F. A., Baylis, N., & Keverne, B. (2005). *The science of well-being*: Oxford University Press.

- Huppert, F. A., & So, T. T. C. (2009). *Measuring subjective well-being: an opportunity for NSOs?* Paper presented at the OECD/ISQOLS meeting, Florence.
- Huppert, F. A., & So, T. T. C. (2013). Flourishing Across Europe: Application of a New Conceptual Framework for Defining Well-Being. *Social Indicators Research*, 110(3), 837-861. doi:10.1007/s11205-011-9966-7
- Hyde, J. S., Mezulis, A. H., & Abramson, L. Y. (2008). The ABCs of depression: integrating affective, biological, and cognitive models to explain the emergence of the gender difference in depression. *Psychological Review*, 115(2), 291.
- Iasiello, M., Bartholomaeus, J., Jarden, A., & Kelly, G. (2017). Measuring PERMA+ in South Australia, the State of Wellbeing: A comparison with national and international norms. *Journal of Positive Psychology and Wellbeing*, 1(2), | 53-72.
- Ijadi-Maghsoodi, R., Marlotte, L., Garcia, E., Aralis, H., Lester, P., Escudero, P., & Kataoka, S. (2017). Adapting and Implementing a School-Based Resilience-Building Curriculum Among Low-Income Racial and Ethnic Minority Students. *Contemporary School Psychology*, 21(3), 223-239. doi:10.1007/s40688-017-0134-1
- Institute of Positive Education. (2018). Positive Education Training Courses. Retrieved from <https://www.ggs.vic.edu.au/Institute/Training/training-courses-01>
- Ippoliti, E. (2015). *Heuristic Reasoning*. Switzerland: Springer International.
- Isen, A. M. (2012). A Role for Neuropsychology in Understanding the Facilitating Influence of Positive Affect on Social Behavior and Cognitive Processes *The Oxford Handbook of Positive Psychology*, (2 Ed.).
- Ivtzan, I., Lomas, T., Hefferon, K., & Worth, P. (2015). *Second wave positive psychology: Embracing the dark side of life*. Oxon, UK: Routledge.
- Jacquez, F., Vaughn, L. M., & Wagner, E. (2013). Youth as partners, participants or passive recipients: A review of children and adolescents in community-based participatory research (CBPR). *American Journal of Community Psychology*, 51(1-2), 176-189.
- Janz, K. F., Lutuchy, E. M., Wenthe, P., & Levy, S. M. (2008). Measuring activity in children and adolescents using self-report: PAQ-C and PAQ-A. *Medicine and science in sports and exercise*, 40(4), 767-772.
- Jensen, B. B., & Simovska, V. (2005). Involving students in learning and health promotion processes-clarifying why? what? and how? *Promotion & Education*, 12(3-4), 150-156.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a Definition of Mixed Methods Research. *Journal of Mixed Methods Research*, 1(2), 112-133. doi:10.1177/1558689806298224
- Jonsson, U., Bohman, H., Hjern, A., von Knorring, L., Olsson, G., & von Knorring, A. L. (2010). Subsequent higher education after adolescent depression: A 15-year follow-up register study. *European Psychiatry*, 25(7), 396-401. doi:<http://dx.doi.org/10.1016/j.eurpsy.2010.01.016>
- Jonsson, U., Bohman, H., von Knorring, L., Olsson, G., Paaren, A., & von Knorring, A. L. (2011). Mental health outcome of long-term and episodic adolescent depression: 15-year follow-up of a community sample. *Journal of Affective Disorders*, 130(3), 395-404. doi:<http://dx.doi.org/10.1016/j.jad.2010.10.046>
- Kam, C.-M., Greenberg, M. T., & Walls, C. T. (2003). Examining the role of implementation quality in school-based prevention using the PATHS curriculum. *Prevention Science*, 4(1), 55-63.

- Kelly, B. (2012a). Implementation science for psychology in education. In B. Kelly & D. F. Perkins (Eds.), *Handbook of Implementation Science for Psychology in Education* (pp. 3-12). New York, NY: Cambridge University Press.
- Kelly, B. (2012b). Implementation science in practice contexts. In B. Kelly & D. F. Perkins (Eds.), *Handbook of Implementation Science for Psychology in Education* (pp. 110-). New York, NY: Cambridge University Press.
- Kelly, B., & Perkins, D. F. (2012). *Handbook of Implementation Science for Psychology in Education*. New York, NY: Cambridge University Press.
- Kern, L., Mathur, S. R., Albrecht, S. F., Poland, S., Rozalski, M., & Skiba, R. J. (2017). The need for school-based mental health services and recommendations for implementation. *School Mental Health*, 1-13. doi:10.1007/s12310-017-9216-5
- Kern, M. L. (2015). Exercise, physical activity, and mental health. In H. S. Friedman (Ed.), *Encyclopedia of Mental Health*. Oxford, UK: Elsevier.
- Kern, M. L., Benson, L., Steinberg, E. A., & Steinberg, L. (2016). The EPOCH measure of adolescent well-being. *Psychological Assessment*, 28(5), 586-597. doi:10.1037/pas0000201
- Kern, M. L., Park, N., Peterson, C., & Romer, D. (2017). The positive perspective on youth development. In D. Romer, D. L. Evans, E. B. Foa, R. E. Gur, H. Hendin, C. P. O'Brien, M. E. Seligman, & B. T. Walsh (Eds.), *Treating and Preventing Adolescent Mental Disorders: What we know and what we don't know* (2nd ed., pp. 543-567): Oxford University Press.
- Kern, M. L., Waters, L., Adler, A., & White, M. (2015). A multidimensional approach to measuring well-being in students: Application of the PERMA framework. *The Journal of Positive Psychology*, 10(3), 262-271.
- Kessler, R. C. (2003). Epidemiology of women and depression. *Journal of Affective Disorders*, 74(1), 5-13.
- Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., Lee, S., & Ustun, T. B. (2007). Age of onset of mental disorders: a review of recent literature. *Current Opinion in Psychiatry*, 20(4), 359.
- Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T., . . . Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, 32(6), 959-976.
- Kessler, R. C., & Bromet, E. J. (2013). The Epidemiology of Depression Across Cultures. *Annual Review of Public Health*, 34(1), 119-138. doi:10.1146/annurev-publhealth-031912-114409
- Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 207-222.
- Keyes, C. L. (2005). Mental illness and/or mental health? Investigating axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology*, 73(3), 539.
- Keyes, C. L. (2007). Promoting and protecting mental health as flourishing: a complementary strategy for improving national mental health. *American Psychologist*, 62(2), 95.
- Kibe, C., & Boniwell, I. (2015). Teaching Well-Being and Resilience in Primary and Secondary School *Positive Psychology in Practice* (pp. 297-312): John Wiley & Sons, Inc.
- Kidd, S. A., & Kral, M. J. (2005). Practicing participatory action research. *Journal of Counseling Psychology*, 52(2), 187.

- Kieling, C., Baker-Henningham, H., Belfer, M., Conti, G., Ertem, I., Omigbodun, O., . . . Rahman, A. (2011). Child and adolescent mental health worldwide: Evidence for action. *The Lancet*, 378(9801), 1515-1525. doi:[http://dx.doi.org/10.1016/S0140-6736\(11\)60827-1](http://dx.doi.org/10.1016/S0140-6736(11)60827-1)
- Kirby, P., & Gibbs, S. (2006). Facilitating Participation: Adults' Caring Support Roles within Child-to-Child Projects in Schools and After-School Settings. *Children & Society*, 20(3), 209-222. doi:10.1002/CHI.872
- Knoop, H. H. (2010). Positiv psykologi i Danmark i 2010: Om ordentlig uorden. *Kognition Og Paedagogik*, 20(75), 2-13.
- Kowalski, K. C., Crocker, P. R., & Donen, R. M. (2004). *The Physical Activity Questionnaire for Older Children (PAQ-C) and Adolescents (PAQ-A) Manual*. University of Saskatchewan, College of Kinesiology.
- Kramer, A. F., & Erickson, K. I. (2007). Capitalizing on cortical plasticity: influence of physical activity on cognition and brain function. *Trends in cognitive sciences*, 11(8), 342-348. doi:<https://doi.org/10.1016/j.tics.2007.06.009>
- Kranzler, A., Hoffman, L. J., Parks, A. C., & Gillham, J. E. (2014). Innovative Models of Dissemination for School-Based Interventions that Promote Youth Resilience and Well-Being. In M. J. Furlong, R. Gilman, & E. S. Huebner (Eds.), *Handbook of Positive Psychology in Schools* (2nd ed.). New York, NY: Routledge.
- Kristjánsson, K. (2012). Positive psychology and positive education: Old wine in new bottles? *Educational Psychologist*, 47(2), 86-105.
- Kutash, K., Duchnowski, A. J., & Lynn, N. (2006). School-based mental health: An empirical guide for decision-makers.
- Landstedt, E., Asplund, K., & Gillander Gådin, K. (2009). Understanding adolescent mental health: the influence of social processes, doing gender and gendered power relations. *Sociology of Health & Illness*, 31(7), 962-978.
- Langley, A. K., Nadeem, E., Kataoka, S. H., Stein, B. D., & Jaycox, L. H. (2010). Evidence-Based Mental Health Programs in Schools: Barriers and Facilitators of Successful Implementation. *School Mental Health*, 2(3), 105-113. doi:10.1007/s12310-010-9038-1
- Lansdown, G., Jimerson, S. R., & Shahroozi, R. (2014). Children's rights and school psychology: Children's right to participation. *Journal of School Psychology*, 52(1), 3-12. doi:<http://dx.doi.org/10.1016/j.jsp.2013.12.006>
- Layous, K., Nelson, S. K., & Lyubomirsky, S. (2013). What is the optimal way to deliver a positive activity intervention? The case of writing about one's best possible selves. *Journal of Happiness Studies*, 14(2), 635-654.
- Lazarus, R. S. (2003). Does the positive psychology movement have legs? *Psychological Inquiry*, 14(2), 93-109. doi:10.1207/S15327965PLI1402\_02
- Leadbeater, B. J., Marshall, A., & Banister, E. (2007). Building strengths through practice—research—policy collaborations. *Child and Adolescent Psychiatric Clinics of North America*, 16(2), 515-532.
- Lehtinen, V., Sohlman, B., & Kovess-Masfety, V. (2005). Level of positive mental health in the European Union: Results from the Eurobarometer 2002 survey. *Clinical Practice and Epidemiology in Mental Health*, 1. doi:10.1186/1745-0179-1-9
- Lendrum, A., & Humphrey, N. (2012). The importance of studying the implementation of interventions in school settings. *Oxford Review of Education*, 38(5), 635-652. doi:10.1080/03054985.2012.734800

- Lendrum, A., Humphrey, N., & Greenberg, M. (2016). Implementing for success in school-based mental health promotion: The role of quality in resolving the tension between fidelity and adaptation. In R. H. Shute & P. T. Slee (Eds.), *Mental health and wellbeing through schools: The way forward* (pp. 53-63). Oxon, UK: Routledge.
- Lerner, R. M., Almerigi, J. B., Theokas, C., & Lerner, J. V. (2005). Positive youth development. *Journal of Early Adolescence*, 25(1), 10-16.
- Levin, B. (2000). Putting students at the centre in education reform. *Journal of Educational Change*, 1(2), 155-172. doi:10.1023/a:1010024225888
- Lind, C. (2007). The power of adolescent voices: co-researchers in mental health promotion. *Educational Action Research*, 15(3), 371-383. doi:10.1080/09650790701514309
- Livingstone, A.-M., Celemencki, J., & Calixte, M. (2014). Youth participatory action research and school improvement: The missing voices of black youth in Montreal. *Canadian Journal of Education/Revue canadienne de l'éducation*, 37(1), 283.
- Lopez, S. J., & Snyder, C. R. (2009). *Oxford handbook of positive psychology*: Oxford University Press.
- Lovibond, S., & Lovibond, P. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Sydney: Psychology Foundation.
- Lubans, D., Richards, J., Hillman, C., Faulkner, G., Beauchamp, M., Nilsson, M., . . . Biddle, S. (2016). Physical Activity for Cognitive and Mental Health in Youth: A Systematic Review of Mechanisms. *Pediatrics*. doi:10.1542/peds.2016-1642
- Lund, T. (2012). Combining Qualitative and Quantitative Approaches: Some Arguments for Mixed Methods Research. *Scandinavian Journal of Educational Research*, 56(2), 155-165. doi:10.1080/00313831.2011.568674
- Lyon, A. R., Bruns, E. J., Weathers, E. S., Canavas, N., Ludwig, K., Stoep, A. V., . . . McCauley, E. (2014). Taking evidence-based practices to school: Using expert opinion to develop a brief, evidence-informed school-based mental health intervention. *Advances in School Mental Health Promotion*, 7(1), 42-61. doi:10.1080/1754730X.2013.857903
- Lyon, A. R., & Koerner, K. (2016). User-Centered Design for Psychosocial Intervention Development and Implementation. *Clinical Psychology: Science and Practice*, 23(2), 180-200. doi:10.1111/cpsp.12154
- Lyon, A. R., Ludwig, K., Romano, E., Koltracht, J., Vander Stoep, A., & McCauley, E. (2014). Using Modular Psychotherapy in School Mental Health: Provider Perspectives on Intervention-Setting Fit. *Journal of Clinical Child & Adolescent Psychology*, 43(6), 890-901. doi:10.1080/15374416.2013.843460
- Lyubomirsky, S. (2008). *The how of happiness: A scientific approach to getting the life you want*. New York, NY: Penguin Press.
- Lyubomirsky, S., Dickerhoof, R., Boehm, J. K., & Sheldon, K. M. (2011). Becoming happier takes both a will and a proper way: An experimental longitudinal intervention to boost well-being. *Emotion*, 11(2), 391-402. doi:10.1037/a0022575
- Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: does happiness lead to success? *Psychological Bulletin*, 131(6), 803.
- Lyubomirsky, S., & Layous, K. (2013). How do simple positive activities increase well-being? *Current Directions in Psychological Science*, 22(1), 57-62.
- MacDonald, C. (2012). Understanding participatory action research: A qualitative research methodology option. *The Canadian Journal of Action Research*, 13(2), 34-50.

- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7(1), 83-104.
- Magolda, M. B. B. (1996). Cognitive learning & personal development: A false dichotomy. *About Campus*, 1(3), 16-21. doi:10.1002/abc.6190010304
- Mammen, G., & Faulkner, G. (2013). Physical Activity and the Prevention of Depression: A Systematic Review of Prospective Studies. *American Journal of Preventive Medicine*, 45(5), 649-657. doi:<https://doi.org/10.1016/j.amepre.2013.08.001>
- Martino, J., & Tutton, J. (2012). Smiling Mind. Retrieved from <https://www.smilingmind.com.au/>
- Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological Methods*, 12(1), 23.
- McAuley, E., & Blissmer, B. (2000). Self-efficacy determinants and consequences of physical activity. *Exercise and Sport Sciences Reviews*, 28(2), 85-88.
- McAuley, E., Blissmer, B., Marquez, D. X., Jerome, G. J., Kramer, A. F., & Katula, J. (2000). Social relations, physical activity, and well-being in older adults. *Preventive Medicine*, 31(5), 608-617.
- McGorry, P. D., Purcell, R., Goldstone, S., & Amminger, G. P. (2011). Age of onset and timing of treatment for mental and substance use disorders: implications for preventive intervention strategies and models of care. *Current Opinion in Psychiatry*, 24(4), 301-306.
- McMahon, E. M., Corcoran, P., O'Regan, G., Keeley, H., Cannon, M., Carli, V., . . . Wasserman, D. (2017). Physical activity in European adolescents and associations with anxiety, depression and well-being. *European Child & Adolescent Psychiatry*, 26(1), 111-122. doi:10.1007/s00787-016-0875-9
- McPhie, M. L., & Rawana, J. S. (2015). The effect of physical activity on depression in adolescence and emerging adulthood: A growth-curve analysis. *Journal of Adolescence*, 40, 83-92. doi:10.1016/j.adolescence.2015.01.008
- Merrell, K. W. (2011). *Social and emotional assets and resiliency scales: Professional Manual*. Lutz, FL: Psychological Assessment Resources.
- Merry, S., McDowell, H., Hetrick, S., Bir, J., & Muller, N. (2004). Psychological and/or educational interventions for the prevention of depression in children and adolescents (Cochrane review). *The Cochrane Library*, 2.
- Meyers, L. S., Gamst, G., & Guarino, A. J. (2017). Data Screening *Applied Multivariate Research* (pp. 31-61). Thousand Oaks, CA: SAGE Publications.
- 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. doi:10.1080/1359432X.2012.694689
- Miller, A. (2008). A critique of positive psychology—or 'The New Science of Happiness'. *Journal of Philosophy of Education*, 42(3-4), 591-608. doi:10.1111/j.1467-9752.2008.00646.x
- Mitra, D. L. (2004). The significance of students: can increasing" student voice" in schools lead to gains in youth development? *Teachers College Record*, 106, 651-688.
- Mitra, D. L. (2012). Increasing student voice in school reform: Building partnerships, improving outcomes. In B. Kelly & D. F. Perkins (Eds.), *Handbook of Implementation*



- Science for Psychology in Education* (pp. 361-372). New York, NY: Cambridge University Press.
- Mitra, D. L., & Gross, S. J. (2009). Increasing student voice in high school reform. *Educational Management Administration & Leadership*, 37(4), 522-543.  
doi:10.1177/1741143209334577
- Mongrain, M., & Anselmo-Matthews, T. (2012). Do positive psychology exercises work? A replication of Seligman et al.(.). *Journal of Clinical Psychology*, 68(4).
- Moran-Ellis, J., Alexander, V., Cronin, A., Dickinson, M., Fielding, J., Sleney, J., & Thomas, H. (2004). *Following a Thread—An Approach to Integrating Multi-method Data Sets*. Paper presented at the ESRC Research Methods Programme, Methods Festival Conference, St Catherine's College. Oxford, UK.
- Moran-Ellis, J., Alexander, V. D., Cronin, A., Dickinson, M., Fielding, J., Sleney, J., & Thomas, H. (2006). Triangulation and integration: processes, claims and implications. *Qualitative Research*, 6(1), 45-59. doi:doi:10.1177/1468794106058870
- Morgan, A. J., Parker, A. G., Alvarez-Jimenez, M., & Jorm, A. F. (2013). Exercise and Mental Health: An Exercise and Sports Science Australia Commissioned Review. *Journal of Exercise Physiology Online*, 16(4).
- Morris, I. (2013). Going beyond the accidental: Happiness, education, and the Wellington College experience. In I. Boniwell, S. A. David, & A. C. Ayers (Eds.), *Oxford Handbook of Happiness*: Oxford University Press.
- Nederhof, A. J. (1985). Methods of coping with social desirability bias: A review. *European Journal of Social Psychology*, 15(3), 263-280.
- Nehmy, T. J., & Wade, T. D. (2014). Reduction in the prospective incidence of adolescent psychopathology: A review of school-based prevention approaches. *Mental Health & Prevention*.
- Noble, T. (2017). Positive Education at the Cross Roads: Important Sign Points for Going in the Right Direction. In M. A. White, G. R. Slemp, & A. S. Murray (Eds.), *Future Directions in Well-Being: Education, Organizations and Policy* (pp. 87-91). Cham: Springer International Publishing.
- Noble, T., & McGrath, H. (2003). *BOUNCE BACK! A classroom resiliency program for schools. The teacher's handbook*. Sydney: Pearson Education.
- Noble, T., & McGrath, H. (2008). The positive educational practices framework: A tool for facilitating the work of educational psychologists in promoting pupil wellbeing. *Educational and Child Psychology*, 25(2), 119-134.
- Noble, T., & McGrath, H. (2013). Well-being and Resilience in Education. In I. Boniwell, S. A. David, & A. C. Ayers (Eds.), *Oxford Handbook of Happiness*: Oxford University Press.
- Noble, T., & McGrath, H. (2016). *The PROSPER School Pathways for Student Wellbeing*. Cham, Switzerland: Springer.
- Noble, T., McGrath, H., Roffey, S., & Rowling, L. (2008). *Scoping Study into Approaches to Student Wellbeing: Report to the Department of Education, Employment and Workplace Relations* Canberra, Australia: Department of Education.
- Nordstrum, L. E., LeMahieu, P. G., & Berrena, E. (2017). Implementation Science: Understanding and finding solutions to variation in program implementation. *Quality Assurance in Education*, 25(1), 58-73.
- Norrish, J. M. (Producer). (2014, 2 March). Positive Education Toolkit. [Power Point Presentation] Retrieved from <http://mind360.com.au/>

- Norrish, J. M. (2015). *Positive education: The Geelong Grammar School journey*. United Kingdom: Oxford University Press.
- Norrish, J. M., & Vella-Brodrick, D. A. (2009). Positive psychology and adolescents: Where are we now? Where to from here? *Australian Psychologist*, 44(4), 270-278. doi:10.1080/00050060902914103
- Norrish, J. M., Williams, P., O'Connor, M., & Robinson, J. (2013). An applied framework for Positive Education. *International Journal of Wellbeing*, 3(2).
- O'Cathain, A., Murphy, E., & Nicholl, J. (2010). Three techniques for integrating data in mixed methods studies. *BMJ*, 341(7783), 1147-1150. doi:10.1136/bmj.c4587
- O'Connor, M., & Cameron, G. (2017). The Geelong Grammar Positive Psychology Experience. In E. Frydenberg, A. J. Martin, & R. J. Collie (Eds.), *Social and Emotional Learning in Australia and the Asia-Pacific: Perspectives, Programs and Approaches* (pp. 353-370). Singapore: Springer Singapore.
- O'Donnell, C. L. (2008). Defining, Conceptualizing, and Measuring Fidelity of Implementation and Its Relationship to Outcomes in K-12 Curriculum Intervention Research. *Review of Educational Research*, 78(1), 33-84. doi:10.3102/0034654307313793
- Oades, L. G. (2017). Wellbeing literacy: The missing link in positive education *Future Directions in Well-Being: Education, Organizations and Policy* (pp. 169-173).
- Oddie, S., Fredeen, D., Williamson, B., DeClerck, D., Doe, S., & Moslenko, K. (2014). Can physical activity improve depression, coping & motivation to exercise in children and youth experiencing challenges to mental wellness? *Psychology*, 5(19), 2147-2158.
- Odom, S. L., Duda, M. A., Kucharczyk, S., Cox, A. W., & Stabel, A. (2014). Applying an implementation science framework for adoption of a comprehensive program for high school students with autism spectrum disorder. *Remedial and Special Education*, 35(2), 123-132.
- OECD. (2013). *OECD Guidelines on Measuring Subjective Well-being*. Paris: OECD Publishing.
- Ogden, T., & Fixsen, D. L. (2014). Implementation science. *Zeitschrift für Psychologie*, 222(1), 4-11. doi:10.1027/2151-2604/a000160
- Ogden, T., & Hagen, K. A. (2018). *Adolescent mental health: Prevention and intervention*. London, UK: Routledge.
- Orman, J., O'Dea, B., Shand, F., Berk, M., Proudfoot, J., & HelenChristensen. (2014). e-Mental health for mood and anxiety disorders in general practice. *Australian Family Physician*, 43(12), 832-837.
- Otake, K., Shimai, S., Tanaka-Matsumi, J., Otsui, K., & Fredrickson, B. L. (2006). Happy people become happier through kindness: A counting kindnesses intervention. *Journal of Happiness Studies*, 7(3), 361-375.
- Owens, J. S., Lyon, A. R., Brandt, N. E., Masia Warner, C., Nadeem, E., Spiel, C., & Wagner, M. (2014). Implementation Science in School Mental Health: Key Constructs in a Developing Research Agenda. *School Mental Health*, 6(2), 99-111. doi:10.1007/s12310-013-9115-3
- Ozer, E. J., & Douglas, L. (2013). The impact of participatory research on urban teens: An experimental evaluation. *American Journal of Community Psychology*, 51(1-2), 66-75.
- Ozer, E. J., & Wright, D. (2012). Beyond School Spirit: The Effects of Youth-Led Participatory Action Research in Two Urban High Schools. *Journal of Research on Adolescence*, 22(2), 267-283.
- Paluska, S. A., & Schwenk, T. L. (2000). Physical Activity and Mental Health. *Sports Medicine*, 29(3), 167-180. doi:10.2165/00007256-200029030-00003



- Parks, A. C., & Biswas-Diener, R. (2013). Positive interventions: Past, present and future. In T. Kashdan & J. Ciarrochi (Eds.), *Bridging acceptance and commitment therapy and positive psychology: A practitioner's guide to a unifying framework* (pp. 140-165). Oakland, CA: New Harbinger.
- Pate, R. R., Pratt, M., Blair, S. N., Haskell, W. L., Macera, C. A., Bouchard, C., . . . King, A. C. (1995). Physical activity and public health: a recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *Jama*, 273(5), 402-407.
- Payton, J., Weissberg, R. P., Durlak, J. A., Dymnicki, A. B., Taylor, R. D., Schellinger, K. B., & Pachan, M. (2008). *The Positive Impact of Social and Emotional Learning for Kindergarten to Eighth-Grade Students: Findings from Three Scientific Reviews. Technical Report*. Retrieved from Chicago, IL:
- Pearson, M., Chilton, R., Woods, H. B., Wyatt, K., Ford, T., Abraham, C., & Anderson, R. (2012). Implementing health promotion in schools: protocol for a realist systematic review of research and experience in the United Kingdom (UK). *Systematic reviews*, 1(1), 1-7. doi:10.1186/2046-4053-1-48
- Pearson, M., Chilton, R., Wyatt, K., Abraham, C., Ford, T., Woods, H. B., & Anderson, R. (2015). Implementing health promotion programmes in schools: a realist systematic review of research and experience in the United Kingdom. *Implementation Science : IS*, 10, 149. doi:10.1186/s13012-015-0338-6
- Penedo, F. J., & Dahn, J. R. (2005). Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Current Opinion in Psychiatry*, 18(2), 189-193.
- Petersen, I., Bhana, A., Lund, C., & Herrman, H. (2014). Primary Prevention of Mental Disorders. In P. Byrne & A. Rosen (Eds.), *Early Intervention in Psychiatry: El of nearly everything for better mental health* (pp. 117-133). United Kingdom: Wiley.
- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. New York: Oxford University Press.
- Piccinelli, M., & Wilkinson, G. (2000). Gender differences in depression *The British Journal of Psychiatry*, 177(6), 486-492.
- Picco, L., Yuan, Q., Vaingankar, J. A., Chang, S., Abidin, E., Chua, H. C., . . . Subramaniam, M. (2017). Positive mental health among health professionals working at a psychiatric hospital. *PloS One*, 12(6), e0178359. doi:10.1371/journal.pone.0178359
- Pluye, P., & Hong, Q. N. (2014). Combining the power of stories and the power of numbers: mixed methods research and mixed studies reviews. *Public Health*, 35(1), 29.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717-731.
- Pressman, S. D., & Cohen, S. (2005). Does positive affect influence health? *Psychological Bulletin*, 131(6), 925.
- Proctor, C. (2014). Enhancing Well-Being in Youth. In M. J. Furlong, R. Gilman, & E. S. Huebner (Eds.), *Handbook of Positive Psychology in Schools* (2nd ed.). New York, NY: Routledge.
- Proctor, C. (2017). *Positive Psychology Interventions in Practice*. Cham, Switzerland: Springer International Publishing.
- Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G. A., Bunger, A., . . . Hensley, M. (2011). Outcomes for Implementation Research: Conceptual Distinctions,

- Measurement Challenges, and Research Agenda. *Administration and Policy in Mental Health and Mental Health Services Research*, 38(2), 65-76. doi:10.1007/s10488-010-0319-7
- Proyer, R. T., Wellenzohn, S., Gander, F., & Ruch, W. (2015). Toward a Better Understanding of What Makes Positive Psychology Interventions Work: Predicting Happiness and Depression From the Person×Intervention Fit in a Follow-Up after 3.5 Years. *Applied Psychology: Health and Well-Being*, 7(1), 108-128. doi:doi:10.1111/aphw.12039
- Pury, C. L. S. (2009). Perseverance. In S. J. Lopez (Ed.), *The Encyclopedia of Positive Psychology*: Blackwell Reference.
- Quinlan, D. M. (2017). Transforming our schools together: A multi-school collaboration to implement positive education *Positive Psychology Interventions in Practice* (pp. 123-142).
- Rasberry, C. N., Lee, S. M., Robin, L., Laris, B., Russell, L. A., Coyle, K. K., & Nihiser, A. J. (2011). The association between school-based physical activity, including physical education, and academic performance: a systematic review of the literature. *Preventive Medicine*, 52, S10-S20.
- Reynolds, D. (2005). Beyond school effectiveness and school improvement. In Alma Harris & N. Bennett (Eds.), *School effectiveness and school improvement: Alternative perspectives* (2nd ed., pp. 26-43). London & New York: Continuum.
- Robertson, I., & Cooper, C. L. (2011). *Well-being: Productivity and happiness at work*: Palgrave Macmillan.
- Robinson, J., Gook, S., Yuen, H. P., Hughes, A., Dodd, S., Bapat, S., . . . Yung, A. (2010). Depression Education and Identification in Schools: An Australian-based Study. *School Mental Health*, 2(1), 13-22. doi:10.1007/s12310-009-9022-9
- Rojas-Andrade, R., & Bahamondes, L. L. (2018). Is Implementation Fidelity Important? A Systematic Review on School-Based Mental Health Programs. *Contemporary School Psychology*. doi:10.1007/s40688-018-0175-0
- Rosenbaum, S., Tiedemann, A., Sherrington, C., Curtis, J., & Ward, P. B. (2014). Physical activity interventions for people with mental illness: A systematic review and meta-analysis. *Journal of Clinical Psychiatry*, 75(9), 964-974. doi:10.4088/JCP.13r08765
- Rosenfield, S., & Mouzon, D. (2013). Gender and mental health. In C. S. Aneshensel, J. C. Phelan, & A. Bierman (Eds.), *Handbook of the Sociology of Mental Health* (pp. 277-296). Dordrecht: Springer Netherlands.
- Ross, C. P. (1980). Mobilizing Schools for Suicide Prevention. *Suicide and Life-Threatening Behavior*, 10(4), 239-243. doi:doi:10.1111/j.1943-278X.1980.tb00705.x
- Rowland, T. W. (1999). Adolescence: A "Risk Factor" for Physical Inactivity. *President's Council on Physical Fitness and Sports Research Digest*.
- Roy, M., Levasseur, M., Doré, I., St-Hilaire, F., Michallet, B., Couturier, Y., . . . Gagnéux, M. (2018). Looking for capacities rather than vulnerabilities: The moderating effect of health assets on the associations between adverse social position and health. *Preventive Medicine*, 110, 93-99. doi:10.1016/j.ypmed.2018.02.014
- Rudy, T. E., Kerns, R. D., & Turk, D. C. (1988). Chronic pain and depression: toward a cognitive-behavioral mediation model. *Pain*, 35(2), 129-140.
- Ruini, C., & Fava, G. A. (2015). Clinical Applications of Well-Being Therapy *Positive Psychology in Practice* (pp. 461-482): John Wiley & Sons, Inc.
- Rusk, R. D., & Waters, L. (2013). Tracing the size, reach, impact, and breadth of positive psychology. *The Journal of Positive Psychology*, 8(3), 207-221.

- Rusk, R. D., & Waters, L. (2015). A psycho-social system approach to well-being: Empirically deriving the Five Domains of Positive Functioning. *The Journal of Positive Psychology*, 10(2), 141-152.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719.
- Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and science in sports and exercise*, 32(5), 963-975.
- Samdal, O., & Rowling, L. (2011). Theoretical and empirical base for implementation components of health-promoting schools. *Health Education*, 111(5), 367-390.
- Samdal, O., & Rowling, L. (2013). Introduction. In O. Samdal & L. Rowling (Eds.), *The implementation of health promoting schools: Exploring the theories of what, why and how*. Oxon, UK: Routledge.
- Samdal, O., & Rowling, L. (2015). Implementation Strategies to Promote and Sustain Health and Learning in School. In Venka Simovska & P. Mannix-McNamara (Eds.), *Schools for Health and Sustainability* (pp. 233-252). Dordrecht, Netherlands: Springer.
- Sandvik, E., Diener, E., & Seidlitz, L. (1993). Subjective well-being: The convergence and stability of self-report and non-self-report measures. *Journal of Personality*, 61(3), 317-342.
- Scholes, M. (2017). Positive Psychology and Sport. In M. A. White, G. R. Slemp, & A. S. Murray (Eds.), *Future Directions in Well-Being: Education, Organizations and Policy* (pp. 129-132). Cham: Springer International Publishing.
- Schueller, S. (2011). *Creating a recommendation framework for positive psychology exercises: The Netflix model of positive psychology*. Publicly accessible Penn Dissertations. Paper 392. Retrieved from <http://repository.upenn.edu/cgi/viewcontent.cgi?article=1491&context=edissertations>
- Schueller, S. M. (2010). Preferences for positive psychology exercises. *The Journal of Positive Psychology*, 5(3), 192-203. doi:10.1080/17439761003790948
- Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-efficacy Scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35-37). Windsor, UK: NFER-NELSON.
- Schwarzer, R., Schmitz, G., & Daytner, G. (1999). *Teacher Self-Efficacy Scale*. Retrieved from <http://www.statisticssolutions.com/teacher-self-efficacy-scale/>
- Scully, D., Kremer, J., Meade, M. M., Graham, R., & Dudgeon, K. (1998). Physical exercise and psychological well being: a critical review. *British Journal of Sports Medicine*, 32(2), 111-120.
- Seligman, M. E. P. (2002). Positive psychology, positive prevention, and positive therapy. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of Positive Psychology* (Vol. 2, pp. 3-12). New York, NY: Oxford University Press.
- Seligman, M. E. P. (2011). *Flourish: A visionary new understanding of happiness and well-being*. New York: Simon and Schuster.
- Seligman, M. E. P. (2013). *Building the State of Wellbeing: A strategy for South Australia*. Adelaide Retrieved from [www.thinkers.sa.gov.au](http://www.thinkers.sa.gov.au).

- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5-14. doi:10.1037//0003-066X.55.1.5
- Seligman, M. E. P., Ernst, R. M., Gillham, J. E., Reivich, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford Review of Education*, 35(3), 293-311.
- Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: empirical validation of interventions. *American Psychologist*, 60(5), 410.
- Shakespeare, T. P., Gebiski, V. J., Veness, M. J., & Simes, J. (2001). Improving interpretation of clinical studies by use of confidence levels, clinical significance curves, and risk-benefit contours. *The Lancet*, 357(9265), 1349-1353.  
doi:[https://doi.org/10.1016/S0140-6736\(00\)04522-0](https://doi.org/10.1016/S0140-6736(00)04522-0)
- Shediac-Rizkallah, M. C., & Bone, L. R. (1998). Planning for the sustainability of community-based health programs: conceptual frameworks and future directions for research, practice and policy. *Health Education Research*, 13(1), 87-108.
- Sheldon, K. M., & Lyubomirsky, S. (2004). Achieving Sustainable New Happiness: Prospects, practices, and prescriptions. In P. A. Linley & S. Joseph (Eds.), *Positive Psychology in Practice* (pp. 127-178). Hoboken, NJ: John Wiley & Sons.
- Sheldon, K. M., & Lyubomirsky, S. (2007). Is it possible to become happier?(And if so, how?). *Social and Personality Psychology Compass*, 1(1), 129-145.
- Shier, H. (2001). Pathways to participation: openings, opportunities and obligations. *Children & Society*, 15(2), 107-117. doi:10.1002/chi.617
- Shoshani, A., Steinmetz, S., & Kanat-Maymon, Y. (2016). Effects of the Maytiv positive psychology school program on early adolescents' well-being, engagement, and achievement. *Journal of School Psychology*, 57, 73-92.  
doi:<http://dx.doi.org/10.1016/j.jsp.2016.05.003>
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: new procedures and recommendations. *Psychological Methods*, 7(4), 422-445.
- Shute, R. H. (2016). Adolescent girls' declining mental health: Where is the feminist perspective? *Journal of Psychotherapy and Counselling Psychology Reflections*, 1(2), 13-20.
- Shute, R. H., & Slee, P. T. (2016). Mental Health and Wellbeing Through Schools: Thinking big, acting wisely. In R. H. Shute & P. T. Slee (Eds.), *Mental Health and Wellbeing Through Schools: The Way Forward* (pp. 185-197). Oxfordshire, UK: Routledge.
- 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.
- Singleton, A. (2011). Generations of change: Religion and spirituality in contemporary Australia. *LiNQ*, 38, DEC 2011, 110-115.
- Sirard, J. R., & Pate, R. R. (2001). Physical activity assessment in children and adolescents. *Sports Medicine*, 31(6), 439-454.
- Skrzypiec, G., Askeel-Williams, H., Slee, P. T., & Rudzinski, A. (2014). *International Baccalaureate Middle Years Programme: Student social-emotional well-being and school success practices*. Retrieved from Bethesda, MD, USA:
- Slater, A., & Tiggemann, M. (2011). Gender differences in adolescent sport participation, teasing, self-objectification and body image concerns. *Journal of Adolescence*, 34(3), 455-463. doi:10.1016/j.adolescence.2010.06.007

- Slemp, G. R., Chin, T.-C., Kern, M. L., Siokou, C., Loton, D., Oades, L. G., . . . Waters, L. (2017). Positive Education in Australia: Practice, Measurement, and Future Directions. In E. Frydenberg, A. J. Martin, & R. J. Collie (Eds.), *Social and Emotional Learning in Australia and the Asia-Pacific: Perspectives, Programs and Approaches* (pp. 101-122). Singapore: Springer Singapore.
- Smithson, J. (2008). Focus groups. In P. Alasuutari, L. Bickman, & J. Brannen (Eds.), *The Sage handbook of social research methods* (pp. 357-370).
- Spencer, R. A., Rehman, L., & Kirk, S. F. (2015). Understanding gender norms, nutrition, and physical activity in adolescent girls: A scoping review. *International Journal of Behavioral Nutrition and Physical Activity*, 12(1). doi:10.1186/s12966-015-0166-8
- Steger, M. F., Shim, Y., Rush, B. R., Brueske, L. A., Shin, J. Y., & Merriman, L. A. (2013). The mind's eye: A photographic method for understanding meaning in people's lives. *The Journal of Positive Psychology*, 8(6), 530-542.
- Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in cognitive sciences*, 9(2), 69-74.
- Steinberg, L. (2016). Commentary on Special Issue on the Adolescent Brain: Redefining Adolescence. *Neuroscience & Biobehavioral Reviews*, 70, 343-346.  
doi:<https://doi.org/10.1016/j.neubiorev.2016.06.016>
- Stimpson, N. J., Davison, G., & Javadi, A. H. (2018). Joggin' the Noggin: Towards a Physiological Understanding of Exercise-Induced Cognitive Benefits. *Neuroscience and Biobehavioral Reviews*, 88, 177-186. doi:10.1016/j.neubiorev.2018.03.018
- Ströhle, A. (2009). Physical activity, exercise, depression and anxiety disorders. *Journal of Neural Transmission*, 116(6), 777-784.
- Suldo, S., & Huebner, E. S. (2004). Does life satisfaction moderate the effects of stressful life events on psychopathological behavior during adolescence? *School Psychology Quarterly*, 19(2), 93.
- Suldo, S., Thalji, A., & Ferron, J. (2011). Longitudinal academic outcomes predicted by early adolescents' subjective well-being, psychopathology, and mental health status yielded from a dual factor model. *The Journal of Positive Psychology*, 6(1), 17-30.
- SurveyMonkey. (2018). Ask more, know more, do more. Retrieved from <https://www.surveymonkey.com/>
- Tabachnick, B., & Fidell, L. (2013). *Using Multivariate Statistics (6th edn)*. Boston: Pearson Education.
- Telzer, E. H., & Fuligni, A. J. (2013). Positive Daily Family Interactions Eliminate Gender Differences in Internalizing Symptoms Among Adolescents. *Journal of Youth and Adolescence*, 42(10), 1498-1511. doi:10.1007/s10964-013-9964-y
- Tennant, R., Goens, C., Barlow, J., Day, C., & Stewart-Brown, S. (2007). A systematic review of reviews of interventions to promote mental health and prevent mental health problems in children and young people. *Journal of Public Mental Health*, 6(1), 25-32.
- The Wellbeing and Resilience Centre. (2018). Resilience Skills Training. Retrieved from <https://wellbeingandresilience.squarespace.com/training/>
- Thompson, B. (2007). Effect sizes, confidence intervals, and confidence intervals for effect sizes. *Psychology in the Schools*, 44(5), 423-432. doi:10.1002/pits.20234
- Thompson Coon, J., Boddy, K., Stein, K., Whear, R., Barton, J., & Depledge, M. H. (2011). Does participating in physical activity in outdoor natural environments have a greater effect on physical and mental wellbeing than physical activity indoors? A systematic review. *Environmental Science & Technology*, 45(5), 1761-1772.

- Tomyn, A. J., & Weinberg, M. K. (2018). Resilience and Subjective Wellbeing: A Psychometric Evaluation in Young Australian Adults. *Australian Psychologist*, 53(1), 68-76. doi:10.1111/ap.12251
- Trost, S. G., Pate, R. R., Sallis, J. F., Freedson, P. S., Taylor, W. C., Dowda, M., & Sirard, J. (2002). Age and gender differences in objectively measured physical activity in youth. *Medicine and science in sports and exercise*, 34(2), 350-355.
- Tugade, M. M., Fredrickson, B. L., & Feldman Barrett, L. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality*, 72(6), 1161-1190.
- Tully, P. J., Zajac, I. T., & Venning, A. J. (2009). The structure of anxiety and depression in a normative sample of younger and older Australian adolescents. *Journal of Abnormal Child Psychology*, 37(5), 717-726.
- United Nations General Assembly. (1989). *Convention on the Rights of the Child*. Geneva, Switzerland: United Nations.
- Vella-Brodrick, D. A. (2011). Positive psychology: Reflecting on the past and projecting into the future. *InPsych*, 33.
- Vella-Brodrick, D. A. (2013). Positive Psychology Interventions: Research Evidence, Practical Utility, and Future Steps. In L. M. C. Keyes (Ed.), *Mental Well-Being: International Contributions to the Study of Positive Mental Health* (pp. 331-353). Dordrecht: Springer Netherlands.
- Vella-Brodrick, D. A., Rickard, N. S., & Chin, T.-C. (2014). *An evaluation of positive education at Geelong Grammar School: A snapshot of 2013*. The University Of Melbourne, VIC, Australia.
- Voss, C., Ogunleye, A. A., & Sandercock, G. R. H. (2013). Physical Activity Questionnaire for children and adolescents: English norms and cut-off points. *Pediatrics International*, 55(4), 498-507. doi:10.1111/ped.12092
- Walton, M. S., & Ury, W. (2003). *Generating Buy-In : Mastering the Language of Leadership*. Saranac Lake, US: AMACOM.
- Waters, L. (2011). A review of school-based positive psychology interventions. *The Australian Educational and Developmental Psychologist*, 28(02), 75-90.
- Waters, L. (2014). Balancing the curriculum: Teaching gratitude, hope and resilience. *A love of Ideas*, 117-124.
- Waters, L. (Producer). (2015, 26/10/15). Positive education: Trends, evidence and advancement. *The University of Melbourne*. Retrieved from <https://www.youtube.com/watch?v=2UABRP73t7A>
- Waters, L. (2018). School Kids Can Be Happier And We Can Prove It. *World Government Summit*. Dubai, UAE.
- Waters, L., Sun, J., Rusk, R., Cotton, A., & Arch, A. (2017). Positive education: Visible wellbeing and positive functioning in students. In M. Slade, L. G. Oades, & A. Jarden (Eds.), *Wellbeing, Recovery and Mental Health* (pp. 245-264). Cambridge, UK: Cambridge University Press.
- Waters, L., & White, M. (2015). Case study of a school wellbeing initiative: Using appreciative inquiry to support positive change. *International Journal of Wellbeing*, 5(1), 19-32.
- Waters, L., White, M., & Murray, S. (2012). Toward the Creation of a Positive Institution. *AI Practitioner: The International Journal of Appreciative Inquiry*, 14(1), 60-65.



- Weiss, L. A., Westerhof, G. J., & Bohlmeijer, E. T. (2016). Can We Increase Psychological Well-Being? The Effects of Interventions on Psychological Well-Being: A Meta-Analysis of Randomized Controlled Trials. *PloS One*, 11(6), e0158092. doi:10.1371/journal.pone.0158092
- Weissberg, R. P., Walberg, H. J., O'Brien, M. U. E., & Kuster, C. B. E. (2003). *Long-term trends in the well-being of children and youth: Issues in children's and families lives*. Washington, DC: CWLA Press.
- Wells, J., Barlow, J., & Stewart-Brown, S. (2003). A systematic review of universal approaches to mental health promotion in schools. *Health Education*, 103(4), 197-220.
- Welsh, E. (2002). Dealing with data: Using NVivo in the qualitative data analysis process. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 3(2), Available at: <<http://www.qualitative-research.net/index.php/fqs/article/view/865/1880>>. doi:<http://dx.doi.org/10.17169/fqs-3.2.865>
- White, M. (2013). Positive Education at Geelong Grammar School. In I. Boniwell, S. A. David, & A. C. Ayers (Eds.), *The Oxford Handbook of Happiness* (pp. 657-670): Oxford University Press.
- White, M. (2016). Why won't it Stick? Positive Psychology and Positive Education. *Psychology of Well-Being*, 6(1), 1-16. doi:10.1186/s13612-016-0039-1
- White, M. (2017). Impact of Activity: Future Directions of Positive Education. In M. A. White, G. R. Slemp, & A. S. Murray (Eds.), *Future Directions in Well-Being: Education, Organizations and Policy* (pp. 27-33). Cham: Springer International Publishing.
- White, M., & Murray, S. (2015). Evidence-based approaches in positive education: Implementing a strategic framework for well-being in schools. Dordrecht, The Netherlands: Springer Press.
- White, M., & Waters, L. (2015a). A case study of 'The Good School': Examples of the use of Peterson's strengths-based approach with students. *The Journal of Positive Psychology*, 10(1), 69-76.
- White, M., & Waters, L. (2015b). Strengths-Based Approaches in the Classroom and Staffroom. In M. A. White & S. Murray (Eds.), *Evidence-Based Approaches in Positive Education: Implementing a Strategic Framework For Well-being in Schools* (pp. 111-133). Dordrecht: Springer.
- White, R. L., Olson, R., Parker, P. D., Astell-Burt, T., & Lonsdale, C. (2018). A qualitative investigation of the perceived influence of adolescents' motivation on relationships between domain-specific physical activity and positive and negative affect. *Mental Health and Physical Activity*, 14, 113-120. doi:<https://doi.org/10.1016/j.mhpa.2018.03.002>
- Wong, P. T. P. (2011). Positive psychology 2.0: Towards a balanced interactive model of the good life. *Canadian Psychology/Psychologie Canadienne*, 52(2), 69.
- Wong, Y. J., Ho, M.-H. R., Wang, S.-Y., & Miller, I. S. K. (2017). Meta-analyses of the relationship between conformity to masculine norms and mental health-related outcomes. *Journal of Counseling Psychology*, 64(1), 80-93. doi:10.1037/cou0000176
- Wood, C. J., Clow, A., Hucklebridge, F., Law, R., & Smyth, N. (2018). Physical fitness and prior physical activity are both associated with less cortisol secretion during psychosocial stress. *Anxiety, Stress and Coping*, 31(2), 135-145. doi:10.1080/10615806.2017.1390083

- Wood, L., & Hendricks, F. (2017). A participatory action research approach to developing youth-friendly strategies for the prevention of teenage pregnancy. *Educational Action Research*, 25(1), 103-118. doi:10.1080/09650792.2016.1169198
- World Health Organization. (1986). *Ottawa Charter for Health Promotion*. Paper presented at the International Conference on Health Promotion, Ottawa, Canada.
- World Health Organization. (1993). *ICD-10 Classification of mental and behavioural disorders: Diagnostic criteria for research*. Geneva.
- World Health Organization. (2004). *Promoting Mental Health: Concepts, emerging evidence, practice: a report from the World Health Organization, Department of Mental Health and Substance Abuse in collaboration with the Victorian Health Promotion Foundation and the University of Melbourne*. Geneva, Switzerland: World Health Organization.
- World Health Organization. (2011). Physical activity. *WHO, Geneva*. Retrieved from <https://www.who.int/dietphysicalactivity/pa/en/>
- World Health Organization. (2013). Mental health action plan 2013–2020. *Geneva: World Health Organization*.
- Wright, K. B. (2005). Researching Internet-Based Populations: Advantages and Disadvantages of Online Survey Research, Online Questionnaire Authoring Software Packages, and Web Survey Services. *Journal of Computer-Mediated Communication*, 10(3), 00-00. doi:doi:10.1111/j.1083-6101.2005.tb00259.x
- Wu, A. D., & Zumbo, B. D. (2007). Understanding and Using Mediators and Moderators. *Social Indicators Research*, 87(3), 367. doi:10.1007/s11205-007-9143-1
- Yang, H., Yang, S., & Isen, A. M. (2013). Positive affect improves working memory: Implications for controlled cognitive processing. *Cognition and Emotion*, 27(3), 474-482. doi:10.1080/02699931.2012.713325



## APPENDIX 1

### Correspondence

**From:** Marion Coady  
**Sent:** Tuesday, 17 March 2015 3:10 PM  
**To:** Amber Halliday  
**Cc:** David Garrett; Craig Duguid; Jarrod Chave; Deborah Turnbull  
**Subject:** Update and seeking of official permission for PhD research

Dear Amber

I am really pleased about the continuing relationship between Blackwood High School and the Psychology Department. We see our involvement being mutually beneficial and value it highly. Therefore our school is prepared to be involved in working within your research proposal.

Thank you for your work to date and I look forward to a long and fruitful relationship.

Regards

Marion



*Inspiring Achievement and Respect*

4 Seymour Street  
Eden Hills  
South Australia 5050

Phone: 08 8278 0900  
Fax: 08 8278 0999

---

**From:** Amber Halliday  
**Sent:** Tuesday, 17 March 2015 3:10 PM  
**To:** Marion Coady  
**Cc:** David Garrett; Craig Duguid; Jarrod Chave; Deborah Turnbull  
**Subject:** Update and seeking of official permission for PhD research

Hi Marion,

A personal thank you for again being open to the University of Adelaide conducting research at your school in 2015.

Please find attached some detailed correspondence on my own PhD project. The document outlines a framework and the methodology detailed is by no means set in stone. I hope this draft nature can be front of mind when considering your permission. Your formal permission is needed for the next step; ethical application to the DECD.

I am happy to provide more information – I have drafted and can send you Participant Information Sheets, consent forms and protocols, a staff workshop outline, plans for student meetings, evaluation measures etc. but I emphasise these are all drafts. The collaborative nature of the collective enquiry method I am proposing means that these are frameworks only and have to be flexible to accommodate input from all stakeholders – and that includes you of course!

Thank you and I hope to hear from you soon.

Warm regards,  
Amber

Amber Halliday  
*PhD Candidate, School of Psychology*  
*University of Adelaide*


This message is intended for the addressee named and may contain privileged information or confidential information or both. If you are not the intended recipient please delete it and notify the sender.

## APPENDIX 2

### Ethics approval

Ethics approval was gained from both the University of Adelaide's Human Research Ethics Committee, and the DECD's Business Intelligence Unit for all studies.

### Paper 1

	<b>THE UNIVERSITY OF ADELAIDE AUSTRALIA</b>
<small>School of Psychology University of Adelaide North Terrace, Adelaide SA 5005 Ph. 61 8 8313 5693 Fax 61 8 8313 3770</small>	
<b>School of Psychology: Human Research Ethics Subcommittee Approval Sheet</b>	
Dear <u>DECD</u>	
The members of the subcommittee have considered your application:	
Code Number: <u>15/18</u>	
Title: <u>POSITIVE EDUCATION FOR</u> <u>AUSTRALIAN STUDENTS</u>	
With [Student name, if applicable] <u>AMBER HALLIDAY</u>	
I am writing to confirm that approval has been granted for this project to proceed. Approval is granted to 12 months from the date specified below.	
Yours sincerely,	
Deputy Convenor, Human Research Ethics Subcommittee	
Name: <u>PAUL DELFAMANO</u>	
Date: <u>8/3/15</u>	
Phone Number: <u>61 8 8313 4936</u>	
Email: <u>paul.delfamano@adelaide.edu.au</u>	



**Government of South Australia**

Department for Education and  
Child Development

**Strategy and Performance**

Level 8  
31 Flinders Street  
Adelaide SA 5000  
GPO Box 1152  
Adelaide SA 5001  
DX 541  
Tel: 8226 3825  
Fax: 8226 1605

**DECD CS/15/00004-1.6**

27 April 2015

Ms Amber Halliday  
School of Psychology  
Hughes Building  
**UNIVERSITY OF ADELAIDE SA 5005**

Dear Ms Halliday,

Your research project titled *"Developing Positive Education for Australian Students"* has now been reviewed by a senior Department for Education and Child Development (DECD) consultant with respect to protection from harm, informed consent, confidentiality and suitability of arrangements. Accordingly, I am pleased to advise you that your project has been **approved**.

Please contact Ms Kali Stefanopoulos, Project Support Officer - Research and Evaluation on (08) 8226 3825 or email: [kali.stefanopoulos@sa.gov.au](mailto:kali.stefanopoulos@sa.gov.au) for any other matters you may wish to discuss regarding the general review/approval process.

***Please supply the department with an electronic copy of the final report*** which will be circulated to interested staff and then made available to DECD educators for future reference.

I wish you well with your research project.

**Mr Daniel Balacco**  
**MANAGER, RESEARCH AND EVALUATION**

Att: Principal/Director/Site Manager letter



THE UNIVERSITY  
OF ADELAIDE  
AUSTRALIA

School of Psychology  
University of Adelaide  
North Terrace, Adelaide SA 5005  
Ph. 61 8 8313 5693  
Fax 61 8 8313 3770

School of Psychology: Human Research Ethics Subcommittee  
Approval Sheet

Dear DEB

The members of the subcommittee have considered your application:

Code Number: 16/02

Title:

DEVELOPING AND IMPLEMENTING  
EFFECTIVE IVS EDUCATION  
FOR AUSTRALIAN STUDENTS.

With [Student name, if applicable] AMBER HALLEDAY

I am writing to confirm that approval has been granted for this project to proceed.  
Approval is granted to 12 months from the date specified below.

Yours sincerely,

Deputy Convenor, Human Research Ethics Subcommittee

Name: PAUL DOLFABBIO

Date: 28/1/16

Phone Number: 8313 4936

Email: paul.dolfabbio@adelaide.edu.au



**Government of South Australia**

Department for Education and  
Child Development

**Strategy and Performance**

Level 8  
31 Flinders Street  
Adelaide SA 5000  
GPO Box 1152  
Adelaide SA 5001  
DX 541  
Tel: 8226 3825  
Fax: 8226 1605

**DECD CS/16/00067-1.1**

8 March 2016

Ms Amber Halliday  
School of Psychology  
Hughes Building  
University of Adelaide  
**Adelaide, SA, 5005**

Dear Ms Halliday

Your research project titled *"Developing and Implementing Effective Positive Education for Australian Students: Using implementation science in the introduction of positive education"* has now been reviewed by a senior Department for Education and Child Development (DECD) consultant with respect to protection from harm, informed consent, confidentiality and suitability of arrangements. Accordingly, I am pleased to advise you that your project has been **approved**.

Please contact Jessica Newport, Research Coordinator - Research and Evaluation on (08) 8226 1206 or email: [DECD.ResearchUnit@sa.gov.au](mailto:DECD.ResearchUnit@sa.gov.au) for any other matters you may wish to discuss regarding the general review/approval process.

***Please supply the department with an electronic copy of the final report*** which will be circulated to interested staff and then made available to DECD educators for future reference.

I wish you well with your research project.

**David Engelhardt**  
**DIRECTOR, BUSINESS INTELLIGENCE UNIT**

Att: Principal/Director/Site Manager letter





THE UNIVERSITY  
OF ADELAIDE  
AUSTRALIA

School of Psychology  
University of Adelaide  
North Terrace, Adelaide SA 5005  
Ph. 61 8 8313 5693  
Fax 61 8 8313 3770

School of Psychology: Human Research Ethics Subcommittee  
Approval Sheet

Dear Den

The members of the subcommittee have considered your application:

Code Number: 17/04

Title:

DEVELOPMENTAL TRENDS IN LANGUAGE:  
A LONGITUDINAL STUDY OF VERBAL,  
ILL-VERBAL, AND PHYSICAL ACTIVITY

With (Student name, if applicable) AMBER HALLIDAY

I am writing to confirm that approval has been granted for this project to proceed.  
Approval is granted to 12 months from the date specified below.

Yours sincerely,

Deputy Convenor, Human Research Ethics Subcommittee

Name: Paul Delfabbato

Date: 30/1/17

Phone Number: 8312 4936

Email: paul.delfabbato@adelaide.edu.au

\* need to add ethics contact details to  
inf. sheet.



Government of South Australia

Department for Education and  
Child Development

Strategy and Performance

Level 8  
31 Flinders Street  
Adelaide SA 5000  
GPO Box 1152  
Adelaide SA 5001  
DX 541  
Tel: 8226 0809  
Fax: 8226 1605

DECD CS/17/000750-1.2

Amber Halliday  
School of Psychology  
Hughes Building  
University of Adelaide  
Adelaide SA 5005

Dear Ms Halliday,

Your research project, *"Developmental trends in wellbeing: A longitudinal analysis of wellbeing, ill-being, and physical activity in adolescents"* has been reviewed by a senior officer within our department.

I am pleased to advise you that your application has been approved, subject to the following conditions:

- That a copy of any final reports, presentations or manuscripts accepted for publication be submitted to the [DECD.ResearchUnit@sa.gov.au](mailto:DECD.ResearchUnit@sa.gov.au) mailbox 30 days prior to their publication.

Please contact Jessica Newport in the Business Intelligence Unit for any other matters you may wish to discuss regarding your application (Tel. (08) 8226 0809 or email: [DECD.ResearchUnit@sa.gov.au](mailto:DECD.ResearchUnit@sa.gov.au)).

I wish you well with your research.

Ben Temperly  
EXECUTIVE DIRECTOR, SYSTEM PERFORMANCE



## Waiver of consent

Amber Halliday  
c/- The School of Psychology  
University of Adelaide  
ADELAIDE SA 5006  
amber.halliday@adelaide.edu.au

25<sup>th</sup> September 2017

TO WHOM IT MAY CONCERN:

### Background

In my current research, *Developmental trends in wellbeing: A longitudinal analysis of wellbeing, ill-being and physical activity as a function of gender*, I wish to use previously collected data for a different purpose than was originally stated. My colleague Victoria Branson and I have worked with Blackwood High School since 2014, collecting data annually for various research projects. I hope to use data from collection in 2014, 2015 and 2016, in addition to data from 2017, to investigate the relationship between wellbeing, physical activity and gender. The application submitted to the HREC in 2017 fully details this project and information on it was given to participants 2017. In addition, the school is supportive of data being used in this way.

### Information to participants

The current project was only conceptualised in late 2016. As such, explicit information was not provided to participants in the 2014-2016 data collections of the expected future use of their data.

### Information included on ethics applications re: other uses of data

Victoria Branson's application for ethical approval in 2015 stated aggregated data may be available for future researchers to access. The applications for ethical approval in 2016 included the statement "aggregated whole-school measure data may be used by other student researchers supervised by Prof. Deborah Turnbull for further research activities at the school." However the 2014 application for ethical approval did not include this proviso.

### National Statement on Ethical Conduct in Human Research (2007) - Updated May 2015, section 2.3.10

- a. This research is low-risk. The measures used in data collection did not carry a risk beyond inconvenience, and there is no further data collection required.
- b. The benefits from the research justify any risk of harm associated with not seeking consent.
- c. It is impracticable to obtain consent for this project in retrospect.
- d. There is no known or likely reason for thinking that participants would not have consented if they had been asked.
- e. There is sufficient protection of participants' privacy; all data are anonymous.
- f. There is an adequate plan to protect the confidentiality of data as outlined in previous applications for ethical approval.

- g. Data are anonymous but results may have significance for the participants' welfare. Thus information arising from the research will be made available to them in general terms eg. a plain language report in the school newsletter.
- h. There were no financial benefits to participants.
- i. The waiver is not prohibited by State, federal, or international law.

It is with the above information that I submit an amendment to the HREC.

Kind regards,  
Amber Halliday  
PhD Candidate

## APPENDIX 3

### Consent forms

#### Paper 1



Dear Parent/Guardian,

PROJECT DETAILS	
Project Title	Developing and Implementing Effective Positive Education for Australian Students
Researcher's name	Amber Halliday
Degree being sought	PhD
Contact details	<a href="mailto:amber.halliday@adelaide.edu.au">amber.halliday@adelaide.edu.au</a> (08) 8313 5007
Ethical Approvals	University of Adelaide: 15/18 Department of Education & Child Development: CS/15/00004-1.6

In signing this form I confirm that;

- I have read the attached Information Sheet for Parents and understand the project to my satisfaction. My consent is given freely.
- I have been given the opportunity to have the project explained to me while a member of my family or a friend is present.
- Although I understand that the purpose of this research project is to improve the quality of positive education at Blackwood High School, it has also been explained that involvement may not be of any direct benefit to my son/daughter/guardianee.
- I have been informed that, while information gained during the study may be published, he/she will not be identified and his/her personal results will not be divulged.
- I understand that he/she is free to withdraw from the project at any time and that this will not adversely affect him/her.

CONSENT	
I give consent for .....(student name)'s involvement in this project.	
Printed Name:	Date:
Parent/Guardian Signature:	
Name and age of participant:.....	
Relationship to participant: .....	
I CONSENT/DO NOT CONSENT (cross out which is not applicable) to any interview of my son/daughter/guardianee in the evaluative stage of the project being audio recorded and a verbatim transcript created. I understand it will be securely stored as de-identified data.	
Parent/Guardian Signature:	Date:
I CONSENT/DO NOT CONSENT (cross out which is not applicable) to my son/daughter/guardianee consuming food provided by Subway. Nutritional information can be found here; <a href="https://www.subway.com.au/site/assets/NutritionalDoc/2014.09.12-Aus-Allergens.pdf">https://www.subway.com.au/site/assets/NutritionalDoc/2014.09.12-Aus-Allergens.pdf</a>	
Parent/Guardian Signature:	Date:
RESEARCHER CERTIFICATION	
I have adequately explained the project to this participant and their consent giver and consider that they understand what is involved.	
Amber Halliday (researcher)	Date:
Signature:	

## Paper 2



Dear Parent/Guardian,

PROJECT DETAILS	
Project Title	Developing and Implementing Effective Positive Education for Australian Students
Researcher's name	Amber Halliday
Degree being sought	PhD
Contact details	<a href="mailto:amber.halliday@adelaide.edu.au">amber.halliday@adelaide.edu.au</a> (08) 8313 5007
Ethical Approvals	University of Adelaide: 16/02 Department of Education & Child Development: CS/16/00067-1.1

In signing this form I confirm that;

- I have read the attached Information Sheet for Parents/Guardians and understand the project to my satisfaction. My consent is given freely.
- Although I understand that the purpose of this research project is to improve the quality of positive education at Blackwood High School, it has also been explained that involvement may not be of any direct benefit to my son/daughter/guardianee.
- I have been informed that, while information gained during the study may be published, he/she will not be identified and his/her personal results will not be divulged.
- I understand that he/she is free to withdraw from the project at any time and that this will not adversely affect him/her.

### CONSENT

I give consent for .....(student name)'s involvement in this project.

Parent/Guardian Signature:

Date:        /        /

Parent/Guardian Printed Name:.....

Relationship to participant: .....

Participant's date of birth:        /        /

Please return to the school by Monday 4<sup>th</sup> April, 2016.

Consent Form 3rd party PARENT.docx



Dear Parent/Guardian,

PROJECT DETAILS	
Project Title	Wellbeing, Stress and Physical Activity
Researchers' names	Amber Halliday, Victoria Branson
Degree being sought	PhD
Contact details	<a href="mailto:amber.halliday@adelaide.edu.au">amber.halliday@adelaide.edu.au</a> and <a href="mailto:victoria.branson@adelaide.edu.au">victoria.branson@adelaide.edu.au</a> (08) 8313 5007
Ethical Approvals	University of Adelaide: 17/04 Department of Education & Child Development: CS/17/000750

In signing this form I confirm that;

- I have read the attached Information Sheet for Parents and understand the project to my satisfaction. My consent is given freely.
- Although I understand that the purpose of this research project is to improve the quality of positive education at Blackwood High School, it has also been explained that involvement may not be of any direct benefit to my son/daughter/guardianee.
- I have been informed that, while information gained during the study may be published, he/she will not be identified and his/her personal results will not be divulged.
- I understand that he/she is free to withdraw from the project at any time and that this will not adversely affect him/her.

#### CONSENT

I give consent for .....(student name)'s involvement in this project.

Parent/Guardian Signature:

Date:        /        /

Parent/Guardian Printed Name:.....

Relationship to participant: .....

Participant's date of birth:        /        /

Consent Form 3rd party PARENT.docx

## APPENDIX 4

### Information sheets

#### Paper 1



#### PARTICIPANT INFORMATION SHEET – STUDENT RESEARCHERS

PROJECT TITLE: **Developing and Implementing Effective Positive Education for Australian Students**

PRINCIPAL INVESTIGATOR: Professor Deborah Turnbull

STUDENT RESEARCHER: Amber Halliday

STUDENT'S DEGREE: PhD

Dear Student,

You are invited to participate in a research project which empowers students to have a say in how Positive Education will be done at Blackwood High School (BHS). This will be undertaken using *Youth Participatory Action Research* where students are guided in the 'research' of their community and encouraged to come up with a plan of action, instead of being 'researched' and others making decisions on your behalf. In doing this, it is hoped that you will be the main drivers of the implementation of Positive Education at Blackwood High School.

##### What is involved?

Students who wish to get involved with this project will make up a Student Wellbeing Action Team (SWATeam) and will be asked to meet (with up to 11 other students from years 9-11 and a BHS staff member and myself, Amber Halliday, present) for approximately six 50 minute sessions. Students will then spend some time 'researching' the school community (e.g., short interviews and polls of other students, parents, teachers), to help answer important questions such as;

- *How can we improve wellbeing and resilience in students at BHS?*
- *What already helps our wellbeing and what stands in the way?*
- *Which aspects of wellbeing and resilience are most important to young people, their parent and teachers?*
- *Which Positive Education strategies will get the best outcome at Blackwood High?*

At the conclusion of the project, the SWATeam will be asked for feedback on the Youth Participatory Action Research process. This will be in a written survey and you may also be asked for an interview. This will take no longer than 15 minutes and will be audio recorded with only coded identification data – e.g. 'Male Student Researcher, Year 10.'

##### What's in it for me?

Potential benefits include finding the best way to do Positive Education at BHS. Being part of the SWATeam will also give you School Community Care credits / S.A.C.E. credits (currently being finalised by the school). There may also be personal benefits for you, such as gaining skills in research, communication, teamwork, organization and critical thinking.

##### Stuff we need to tell you;

While there are few foreseeable risks, support will be available if any participant experiences any distress – for example, University of Adelaide researchers include registered and provisional psychologists and BHS student counsellors will be on hand during SWATeam meetings – further information is on the back of this sheet. Participants are also free to withdraw at any time during the process. De-identified raw data from this project will be securely stored on University of Adelaide servers and kept for 5 years as per the Australian Code for the Responsible Conduct of Research. Findings from this project may be published in academic journals or the mainstream media (without any identifying information).

##### Who do I contact if I have questions about the project?

Questions, complaints or concerns about the project can be directed to Deputy Principal David Garrett, Assistant Principal Jarrod Chave or Amber Halliday on 8313 5007 or [amber.halliday@adelaide.edu.au](mailto:amber.halliday@adelaide.edu.au). If you wish to speak with an independent person, contact details are on the back of this sheet.

##### If I want to participate, what do I do?

That's great! Register your interest with Jarrod Chave and you'll receive an Information Sheet and Consent Form for your parents to read and fill out. Return the completed consent forms to the school. I look forward to working with you!

Yours faithfully,

Amber Halliday

PhD Candidate, School of Psychology

University of Adelaide

## Contacts for Complaints & Further Information

The following study has been reviewed and ethically approved:

PROJECT DETAILS	
Project Title	Developing and Implementing Effective Positive Education for Australian Students
Researcher's name	Amber Halliday
Degree being sought	PhD
Contact details	<a href="mailto:amber.halliday@adelaide.edu.au">amber.halliday@adelaide.edu.au</a> (08) 8313 5007
Ethical Approvals	University of Adelaide: 15/18 Department of Education & Child Development: CS/15/00004-1.6

This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (see <http://www.nhmrc.gov.au/publications/synopses/e72syn.htm>)

It is important that people participating in approved projects have an independent and confidential reporting mechanism which they can use if they have any worries or complaints about that research. Details follow;

### Complaints:

1. If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the project co-ordinator:

Project Coordinator	
Name	Professor Deborah Turnbull
Phone	08 31 31229

2. If you wish to discuss with an independent person matters related to:
  - making a complaint, or
  - raising concerns on the conduct of the project, or
  - the University policy on research involving human participants, or
  - your rights as a participant,

Please contact the Chair of the School of Psychology's Human Research Ethics Subcommittee on phone (08) 8313 4936 or by email to [paul.delfabbro@adelaide.edu.au](mailto:paul.delfabbro@adelaide.edu.au)

- Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

### Assistance:

If you experience any emotional distress from your participation you can speak to one of the school's Student Counsellors, your Care Group teacher, a University of Adelaide researcher, your Year Level Leader or you can contact The Kids Helpline on 1800 55 1800 or at [www.kidshelp.com.au](http://www.kidshelp.com.au)

## PARTICIPANT INFORMATION SHEET - PARENTS

PROJECT TITLE: Developing and Implementing Effective Positive Education for Australian Students

PRINCIPAL INVESTIGATOR: Professor Deborah Turnbull

STUDENT RESEARCHER: Amber Halliday

STUDENT'S DEGREE: PhD

Dear Parent/Care Giver,

Your son/daughter/guardianee has been invited to participate in a research project aimed to empower BHS students and the wider school community to implement an effective positive education strategy for Blackwood High School (BHS). This will be undertaken using *Participatory Action Research* where school students are enabled to research their community (other students, staff and parents) and come up with a plan of action, instead of being 'researched' and others making decisions on their behalf. This process of consultation and collaboration is hoped will result in the best way of 'doing' Positive Education at BHS.

### What does the project involve?

Students who wish to get involved will be asked to meet (with up to 11 other students from Years 9-11, a BHS staff member and myself) for approximately six 50 minute sessions, fortnightly during term 3, with the possibility of the last session being early in term 4. These meetings will be scheduled so that they will not impact the same subject, and Subway food will be provided (see consent form). In-between meetings, students will spend some time 'researching' the school community (by conducting short interviews and polls of other students, parents, teachers), to help answer important questions such as;

- *How can we improve wellbeing and resilience in students at BHS?*
- *Which aspects of wellbeing and resilience are most important to young people, their parents and to teachers?*
- *What already helps our wellbeing and what stands in the way?*
- *Which positive educational strategies will get the best outcome at Blackwood High?*

At the conclusion of the project, student researchers will be asked for feedback on what was good and what could be improved about the Participatory Action Research process. This will happen in a confidential survey and may include an interview of no longer than 15 minutes. With your express permission, these will be audio recorded and kept with only coded identification data – e.g. 'Male Student Researcher, Year 10'.

### How does this benefit and protect my son/daughter/guardianee?

Potential benefits include finding an effective way to implement Positive Education at BHS and students participating will likely gain personal skills in research, communication, teamwork, organisation and critical thinking. Being a student researcher will also give students School Community Credits / SACE credits (currently being finalised by the school). While there are no foreseeable risks, in the unlikely event any participant experiences any distress, support will be available. For example, University of Adelaide researchers include registered and provisional psychologists and a BHS student counsellor will be on hand during meetings. Participants are also free to withdraw at any time during the process. De-identified raw data from this project will be securely stored on University of Adelaide servers and kept for five years as per the Australian Code for the Responsible Conduct of Research. Findings from this project may be published in academic journals or the mainstream media (without any identifying information).

### Who do I contact if I have questions about the project?

Questions, complaints or concerns about the project can be directed to Deputy Principal David Garrett, Assistant Principal Jarrod Chave or Amber Halliday on 8313 5007 or [amber.halliday@adelaide.edu.au](mailto:amber.halliday@adelaide.edu.au). A family member may be present to aid understanding. If you wish to speak with an independent person, contact details are on the back of this sheet.

### If I agree to let my son or daughter participate, what do I do?

That's great! Please fill out the attached consent form and return to Jarrod Chave at the school. Many thanks.

Yours faithfully,

Amber Halliday

PhD Candidate, School of Psychology

University of Adelaide



## Further Information & Contacts

### Information:

The following study has been reviewed and ethically approved:

PROJECT DETAILS	
Project Title	Developing and Implementing Effective Positive Education for Australian Students
Researcher's name	Amber Halliday
Degree being sought	PhD
Contact details	<a href="mailto:amber.halliday@adelaide.edu.au">amber.halliday@adelaide.edu.au</a> (08) 8313 5007
Ethical Approvals	University of Adelaide: 15/18 Department of Education & Child Development: CS/15/00004-1.6

This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (see <http://www.nhmrc.gov.au/publications/synopses/e72syn.htm>)

It is important that people participating in approved projects have an independent and confidential reporting mechanism which they can use if they have any worries or complaints about that research. Details follow;

### Complaints:

1. If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the project co-ordinator:

Project Coordinator	
Name	Professor Deborah Turnbull
Phone	08 31 31229

2. If you wish to discuss with an independent person matters related to:

- making a complaint, or
- raising concerns on the conduct of the project, or
- the University policy on research involving human participants, or
- your rights as a participant,

Please contact the Chair of the School of Psychology's Human Research Ethics Subcommittee on phone (08) 8313 4936 or by email to [paul.delfabbro@adelaide.edu.au](mailto:paul.delfabbro@adelaide.edu.au)

- Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

### Assistance:

If your child experiences any emotional distress from their participation, they can speak to one of the school's Student Counsellors, their Care Group teacher, a University of Adelaide researcher, their Year Level Leader or they can contact The Kids Helpline on 1800 55 1800 or at [www.kidshelp.com.au](http://www.kidshelp.com.au)



## STUDENT INFORMATION SHEET

PROJECT TITLE: Wellbeing and Positive Education @ BHS  
PRINCIPAL INVESTIGATOR: Professor Deborah Turnbull  
STUDENT RESEARCHER: Amber Halliday  
STUDENT'S DEGREE: PhD

Dear Students,

You are invited to participate in a research project which aims to track wellbeing and health behaviours of students at Blackwood High School as positive education is implemented. Similar surveys of students have been conducted in the last two years and the information has been valuable in understanding needs of students at the school.

### What is involved?

You will be asked to complete one online questionnaire that will take between 15 and 25 minutes during a school lesson. Year 9s will be asked to complete two additional online questionnaires that are expected to take between 5 and 15 minutes during a school lesson.

### What's in it for me?

Benefits for all BHS students include the gathering of quality evidence for most effective positive education strategy for Blackwood High School. Positive education aims to give students the skills for feeling good and functioning well.

### Stuff we need to tell you;

- There is no individual identification of students, all data is completely anonymous.
- Participation in this project is completely voluntary and you can withdraw from the online questionnaire at any time without penalty. You will be given an alternative activity to complete.
- While there are few foreseeable risks, support will be available if any participant experiences any distress. For example BHS Counsellors will be on hand during the administering of the questionnaire – further information is on the back on this sheet.
- De-identified raw data from this project will be securely stored on University of Adelaide servers and kept for 5 years as per the Australian Code for the Responsible Conduct of Research.
- Findings from this project may be published in academic journals or the mainstream media (without any identifying information).

### Who do I contact if I have questions about the project?

Questions or concerns about the project can be directed to Deputy Principal David Garrett, Assistant Principal Lee Knight or Amber Halliday on 8313 5007 or [amber.halliday@adelaide.edu.au](mailto:amber.halliday@adelaide.edu.au). If you wish to speak with an independent person, contact details are on the back of this sheet.

### Ok, so now what?

Get a parent/guardian to fill out the attached consent form and return it to your care group teacher by Monday 4<sup>th</sup> April, 2016. Your teachers will let you know the rest. Thank you for your participation!

Yours faithfully,  
Amber Halliday  
PhD Candidate, School of Psychology  
University of Adelaide

participant\_information\_sheet\_STUDENTS 2016.docx

## Contacts for Concerns & Further Information

The following study has been reviewed and ethically approved:

PROJECT DETAILS	
Project Title	Developing and Implementing Effective Positive Education for Australian Students
Researcher's name	Amber Halliday
Degree being sought	PhD
Contact details	<a href="mailto:amber.halliday@adelaide.edu.au">amber.halliday@adelaide.edu.au</a> (08) 8313 5007
Ethical Approvals	University of Adelaide: 16/02 Department of Education & Child Development: CS/16/00067-1.1

This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (see <http://www.nhmrc.gov.au/publications/synopses/e72syn.htm>)

It is important that people participating in approved projects have an independent and confidential reporting mechanism which they can use if they have any worries or complaints about that research. Details follow;

### Complaints:

1. If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the project co-ordinator:

Project Coordinator	
Name	Professor Deborah Turnbull
Phone	08 31 31229

2. If you wish to discuss with an independent person matters related to:
  - making a complaint, or
  - raising concerns on the conduct of the project, or
  - the University policy on research involving human participants, or
  - your rights as a participant,

Please contact the Chair of the School of Psychology's Human Research Ethics Subcommittee on phone (08) 8313 4936 or by email to [paul.delfabbro@adelaide.edu.au](mailto:paul.delfabbro@adelaide.edu.au)

- Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

### Assistance:

If you experience any emotional distress from your participation you can speak to one of the school's Student Counsellors, your Care Group teacher, a University of Adelaide researcher, your Year Level Leader or you can contact The Kids Helpline on 1800 55 1800 or at [www.kidshelp.com.au](http://www.kidshelp.com.au)

PROJECT TITLE: Developing and Implementing Effective Positive Education for Australian Students  
PRINCIPAL INVESTIGATOR: Professor Deborah Turnbull  
STUDENT RESEARCHER: Amber Halliday  
STUDENT'S DEGREE: PhD

Dear Parents and/or Caregivers,

Your child is invited to participate in a research project which aims to track wellbeing and health behaviours of students at Blackwood High School (BHS) as positive education is progressively implemented. Similar surveys of students have been conducted in the last two years and the information has been valuable in understanding needs of students at the school.

**What is involved?**

Your child<sup>1</sup> will be asked to complete one online questionnaire that will take between 15 and 25 minutes during a school lesson. During the year, Year 9s only will be asked to complete two additional online questionnaires that are expected to take between 5 and 15 minutes during care-group time and may be asked to participate in a student-led focus group during care-group time to help evaluate positive education in their year level.

There is no individual identification of students, all data is completely anonymous. Participation in this project is completely voluntary and your child can withdraw from the online questionnaire at any time without penalty. If students choose to participate, they give their consent at the beginning of the questionnaire. If you consent for your child to participate, please fill out the attached form and return it to the school by Monday 4<sup>th</sup> April, 2016.

**What's in it for my son/daughter?**

Benefits for all students include compiling quality evidence for the most effective positive education strategy at BHS. Positive education aims to give students the skills for feeling good, functioning well, resilience and positive character.

**Essential information;**

While there are few foreseeable risks, support will be available if any participant experiences any distress – for example BHS Counsellors will be on hand during the administering of the questionnaire and information about contacting The Kids Helpline on 1800 55 1800 or at [www.kidshelp.com.au](http://www.kidshelp.com.au) is provided at the beginning of the questionnaire – further information is on the back on this sheet. De-identified raw data from this project will be securely stored on University of Adelaide servers and kept for 5 years as per the Australian Code for the Responsible Conduct of Research. Findings from this project may be published in academic journals or the mainstream media (without any identifying information).

**Who do I contact if I have questions about the project?**

Questions or concerns about the project can be directed to Deputy Principal David Garrett, Assistant Principal Lee Knight or Amber Halliday on 8313 5007 or [amber.halliday@adelaide.edu.au](mailto:amber.halliday@adelaide.edu.au). If you wish to speak with an independent person, contact details are on the back of this sheet.

**So now what?**

Please fill out the attached consent form and have your child return it to the school. Thank you for your cooperation.

Yours faithfully,

**Amber Halliday**

PhD Candidate, School of Psychology  
University of Adelaide

---

<sup>1</sup> If your child is younger than 13 years of age on the day of the questionnaire, they will not be required to participate and will be given an alternative activity so they can remain within the class.

## Contacts for Concerns & Further Information

The following study has been reviewed and ethically approved:

PROJECT DETAILS	
Project Title	Developing and Implementing Effective Positive Education for Australian Students
Researcher's name	Amber Halliday
Degree being sought	PhD
Contact details	<a href="mailto:amber.halliday@adelaide.edu.au">amber.halliday@adelaide.edu.au</a> (08) 8313 5007
Ethical Approvals	University of Adelaide: 16/02 Department of Education & Child Development: CS/16/00067-1.1

This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (see <http://www.nhmrc.gov.au/publications/synopses/e72syn.htm>)

It is important that people participating in approved projects have an independent and confidential reporting mechanism which they can use if they have any worries or complaints about that research. Details follow;

### Complaints:

1. If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the project co-ordinator:

Project Coordinator	
Name	Professor Deborah Turnbull
Phone	08 31 31229

2. If you wish to discuss with an independent person matters related to:
  - making a complaint, or
  - raising concerns on the conduct of the project, or
  - the University policy on research involving human participants, or
  - your rights as a participant,

Please contact the Chair of the School of Psychology's Human Research Ethics Subcommittee on phone (08) 8313 4936 or by email to [paul.delfabbro@adelaide.edu.au](mailto:paul.delfabbro@adelaide.edu.au)

- Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

### Assistance:

Although considered unlikely, if your child experiences any emotional distress from their participation, they can speak to one of the school's Student Counsellors, their Care Group teacher, a University of Adelaide researcher, their Year Level Leader, all of who will be on hand during the online questionnaire. Or they can contact The Kids Helpline on 1800 55 1800 or at [www.kidshelp.com.au](http://www.kidshelp.com.au).

Students are informed of these details in their information sheets and details will be clearly displayed during any research activity.



## STUDENT INFORMATION SHEET

PROJECT TITLE: Wellbeing, Stress and Physical Activity  
PRINCIPAL INVESTIGATOR: Professor Deborah Turnbull  
STUDENT RESEARCHERS: Amber Halliday, Victoria Branson  
STUDENTS' DEGREE: PhD

Dear Students,

You are invited to participate research which aims to investigate wellbeing, stress and physical activity in students at Blackwood High School. Similar surveys of students have been conducted in the last few years and the information has been valuable in understanding needs of students at the school.

### What is involved?

You will be asked to complete two online surveys during the year. The first survey will be on wellbeing and physical activity and will take between 15 and 25 minutes during care group time in term 2. The second survey will be on factors involved in adolescent stress and will take place during a dedicated lesson in term 3.

### What's in it for me?

Benefits for all BHS students include the gathering of quality evidence for most effective wellbeing curriculum for Blackwood High School to help students feel good and function well.

### Stuff we need to tell you;

- There will be no individual identification of students, but de-identified data may be linked to other outcome data held by the school.
- Participation in this project is completely voluntary and you can withdraw from the online questionnaire at any time without penalty. You will be given an alternative activity to complete.
- While there are few foreseeable risks, support will be available if any participant experiences any distress. For example BHS Counsellors will be on hand during the administering of the questionnaire.
- De-identified raw data from this project will be securely stored on University of Adelaide servers and kept for 5 years as per the Australian Code for the Responsible Conduct of Research.
- Findings from this project may be published in academic journals or the mainstream media (without any identifying information).
- Further information including complaints and assistance is on the back on this sheet.

### Who do I contact if I have questions about the project?

Questions or concerns about the project can be directed to Deputy Principal David Garrett, Assistant Principal Lee Knight or university researchers Amber and Victoria on 8313 5007 or [amber.halliday@adelaide.edu.au](mailto:amber.halliday@adelaide.edu.au) and [victoria.branson@adelaide.edu.au](mailto:victoria.branson@adelaide.edu.au). If you wish to speak with an independent person, contact details are on the back of this sheet.

### Ok, so now what?

You don't have to do anything yet - your parent/guardian will be contacted for their consent and your teachers will let you know the rest. Thank you for your participation!

Yours faithfully,  
Amber Halliday  
PhD Candidate, School of Psychology  
University of Adelaide

Victoria Branson  
PhD Candidate, School of Psychology  
University of Adelaide

2017Participant information sheet STUDENTS.docx

## Contacts for Concerns & Further Information

The following study has been reviewed and ethically approved:

PROJECT DETAILS	
Project Title	Wellbeing, Stress and Physical Activity.
Researcher's name	Amber Halliday
Degree being sought	PhD
Contact details	<a href="mailto:amber.halliday@adelaide.edu.au">amber.halliday@adelaide.edu.au</a> (08) 8313 5007
Ethical Approvals	University of Adelaide: 17/04 Department of Education & Child Development: CS/17/000750

This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (see <http://www.nhmrc.gov.au/publications/synopses/e72syn.htm>)

It is important that people participating in approved projects have an independent and confidential reporting mechanism which they can use if they have any worries or complaints about that research. Details follow;

### Complaints:

1. If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the project co-ordinator:

Project Coordinator	
Name	Professor Deborah Turnbull
Phone	(08) 8313 1229

2. If you wish to discuss with an independent person matters related to:
  - making a complaint, or
  - raising concerns on the conduct of the project, or
  - the University policy on research involving human participants, or
  - your rights as a participant,

Please contact the Chair of the School of Psychology's Human Research Ethics Subcommittee on phone (08) 8313 4936 or by email to [paul.delfabbro@adelaide.edu.au](mailto:paul.delfabbro@adelaide.edu.au)

- Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

### Assistance:

If you experience any emotional distress from your participation you can speak to one of the school's Student Counsellors, your Care Group teacher, a University of Adelaide researcher, your Year Level Leader or you can contact The Kids Helpline on 1800 55 1800 or at [www.kidshelp.com.au](http://www.kidshelp.com.au)



To: parent@blackwood.edu.sa.au  
From: admin@ blackwood.edu.sa.au

PROJECT TITLE: Wellbeing, Stress and Physical Activity  
PRINCIPAL INVESTIGATOR: Professor Deborah Turnbull  
STUDENT RESEARCHER: Amber Halliday and Victoria Branson  
STUDENTS' DEGREE: PhD

Dear Parents and/or Caregivers,

Your child is invited to participate in a research project which aims to investigate wellbeing, stress and physical activity in students at Blackwood High School. Similar surveys of students have been conducted in the last few years and the information has been valuable in understanding needs of students at the school.

**What is involved?**

Your child<sup>1</sup> will be asked to complete two online surveys during the year. The first survey will be on wellbeing and physical activity and will take between 15 and 25 minutes during care group time in term 2. The second survey will be on factors involved in adolescent stress and will take place during a dedicated lesson in term 3. Non-participating students will be given an alternate non-classwork activity.

There is no individual identification of students. Participation in this project is completely voluntary and your child can withdraw from the online questionnaire at any time without penalty. De-identified data may be linked to other outcome data held by the school. If students choose to participate, they give their consent at the beginning of the questionnaire. If you consent for your child to participate, [please indicate at this link](#).

**What's in it for my son/daughter?**

Benefits for all students include compiling quality evidence for the most effective wellbeing curriculum for Blackwood High School to help students feel good, function well, build resilience and positive character.

**Essential information;**

While there are few foreseeable risks, support will be available if any participant experiences any distress – for example BHS Counsellors will be on hand during the administering of the questionnaire and information about contacting The Kids Helpline on 1800 55 1800 or at [www.kidshelp.com.au](http://www.kidshelp.com.au) is provided at the beginning of the questionnaire – further information is on the back on this sheet. De-identified raw data from this project will be securely stored on University of Adelaide servers and kept for 5 years as per the Australian Code for the Responsible Conduct of Research. Findings from this project may be published in academic journals or the mainstream media (without any identifying information).

**Who do I contact if I have questions about the project?**

Questions or concerns about the project can be directed to Deputy Principal David Garrett, Assistant Principal Lee Knight or researchers Amber and Victoria on 8313 5007 or [amber.halliday@adelaide.edu.au](mailto:amber.halliday@adelaide.edu.au) and [victoria.branson@adelaide.edu.au](mailto:victoria.branson@adelaide.edu.au). If you wish to speak with an independent person, contact details are [here](#).

**So now what?**

Please indicate your consent [here](#). Thank you for your cooperation.

Yours faithfully,  
Amber Halliday  
PhD Candidate, School of Psychology  
University of Adelaide

---

<sup>1</sup> If your child is younger than 13 years of age on the day of the questionnaire, they will not be required to participate and will be given an alternative activity so they can remain within the class.



## Contacts for Concerns & Further Information

The following study has been reviewed and ethically approved:

PROJECT DETAILS	
Project Title	Developing and Implementing Effective Positive Education for Australian Students
Researcher's name	Amber Halliday
Degree being sought	PhD
Contact details	<a href="mailto:amber.halliday@adelaide.edu.au">amber.halliday@adelaide.edu.au</a> (08) 8313 5007
Ethical Approvals	University of Adelaide: 16/02 Department of Education & Child Development: CS/16/00067-1.1

This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (see <http://www.nhmrc.gov.au/publications/synopses/e72syn.htm>)

It is important that people participating in approved projects have an independent and confidential reporting mechanism which they can use if they have any worries or complaints about that research. Details follow;

### Complaints:

1. If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the project co-ordinator:

Project Coordinator	
Name	Professor Deborah Turnbull
Phone	(08) 83131229

2. If you wish to discuss with an independent person matters related to:
  - making a complaint, or
  - raising concerns on the conduct of the project, or
  - the University policy on research involving human participants, or
  - your rights as a participant,

Please contact the Chair of the School of Psychology's Human Research Ethics Subcommittee on phone (08) 8313 4936 or by email to [paul.delfabbro@adelaide.edu.au](mailto:paul.delfabbro@adelaide.edu.au)

- Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

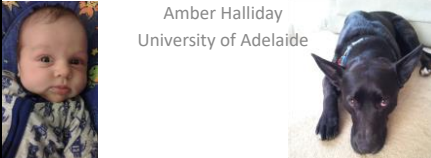

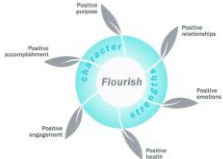

### Assistance:

Although considered unlikely, if your child experiences any emotional distress from their participation, they can speak to one of the school's Student Counsellors, their Care Group teacher, a University of Adelaide researcher, their Year Level Leader, all of who will be on hand during the online questionnaire. Or they can contact The Kids Helpline on 1800 55 1800 or at [www.kidshelp.com.au](http://www.kidshelp.com.au).

Students are informed of these details in their information sheets and details will be clearly displayed during any research activity.



## Workshop 2

<p>THE UNIVERSITY of ADELAIDE</p> <p>BLACKWOOD HIGH SCHOOL</p> <p><b>Positive Education @ BHS</b> Workshop 2 - How to do PAR</p> <p>Amber Halliday University of Adelaide</p> 	<p><b>Workshop 2</b></p> <ul style="list-style-type: none"> <li>Review workshop 1</li> <li>Preliminary Logos...?</li> <li>How to do PAR</li> <li>Research task</li> </ul>
<p><b>Review</b></p>  <ul style="list-style-type: none"> <li>BHS in 2014</li> <li>Wellbeing <ul style="list-style-type: none"> <li>Definition: feeling good &amp; functioning well</li> <li>Benefits: (↑health, ↑longevity, ↑creativity, ↑resilience, ↑academic success, prevention of ill-being)</li> <li>PERMA</li> </ul> </li> <li>Positive Education <ul style="list-style-type: none"> <li>Programs (classroom), Strategies (embedded) &amp; school-wide practices.</li> </ul> </li> </ul>	<p><b>Pos Ed @ BHS Logos?</b></p> <ul style="list-style-type: none"> <li>Example from Geelong Grammar School;</li> </ul> 
<p><b>Participatory Action Research (PAR)</b></p> <ul style="list-style-type: none"> <li>PAR is research into an issue by the people who that issue directly affects.</li> </ul> <p><b>OUR ISSUE:</b> How can we best do Pos Ed @ BHS?</p> <ul style="list-style-type: none"> <li>According to pre-existing evidence (Amber's job)</li> <li>According to needs (baseline data)</li> <li>According to wants (of BHS community - PAR)</li> </ul>	<p><b>PAR Research Method</b></p> <ol style="list-style-type: none"> <li>Background</li> <li>Refine research questions</li> <li>Record data</li> <li>Analyse data</li> <li>Present findings</li> </ol> 
<p><b>3. Record Data</b></p> <ul style="list-style-type: none"> <li>Ways to do research <ul style="list-style-type: none"> <li>Focus groups</li> <li>Interviews</li> <li>Surveys</li> <li>Community asset mapping</li> <li>Observations</li> <li>Field notes</li> <li>Artefacts (eg. school uniform, school newspaper).</li> </ul> </li> <li>Which methods do you think are best?</li> </ul>	<p><b>3. Record Data</b></p> <p><u>Interview</u></p> <ul style="list-style-type: none"> <li>Interview teams</li> <li>Data record sheet <ul style="list-style-type: none"> <li>Ethics</li> </ul> </li> <li>Communication skills</li> <li>Adverse Events</li> </ul>
<p><b>1. Background</b></p> <ul style="list-style-type: none"> <li>COMMUNITY ASSET MAP <p>What helps and what hinders wellbeing for BHS students?</p> </li> </ul>	<p><b>Ecological Model of Human Development</b></p> <ul style="list-style-type: none"> <li>Understanding can come from not just the individual, but an understanding the system in which they are placed.</li> <li>There are influences at more than just the individual level.</li> </ul>

### Questions I had...

- Who is included in BHS Community?
- Ideas for presentation?
- Other ways to collect data?
- Social harms anticipated?

### Research Tasks

- **BACKGROUND RESEARCH**
  - ‘Map’ facilitators & barriers to wellbeing at BHS.
  - Use the ecological model as a guide.

Copyright © 2019 Amber Halliday. All rights reserved.

## Adverse Event Protocol

This research project is considered low-risk, but everyone involved, including student researchers, will need to know what to do in the case of *adverse events*.

### **What is an adverse event?**

An adverse event is any unwanted and potentially harmful occurrence, effect or outcome that sometimes happens with research. The event may or may not be related to our research, but we have an ethical obligation to attend to such an event if it occurs in the vicinity of our research.

### **What might it look like?**

With our project, adverse events are unlikely, but we are most likely to encounter adverse events such as generalised psychological distress or social harms.

1. General distress in participants can look like a number of things, for example;
  - Fatigue
  - Difficulty in managing their anger
  - Shortness of breath
  - Inability to keep still
  - Showing compulsive or obsessive behaviours
2. Social harms include possible damage to social networks or relationships with others in the collecting of data (most likely from other students).

### **What do I do?**

#### 1. General distress

Be aware of the initial common signs of distress and respond if you see any;

- Ask if the participant is ok to continue. Their care is of utmost importance – they may wish to sit or have a break from questioning.
- They may withdraw, you must let them, or they may continue. In this case continue to monitor for further signs of distress.
- If further distress occurs, ask if the participant would like any assistance from a teacher, school counsellor or University of Adelaide researcher. They also have further information on where to seek help on the back of their Participant Information Sheet.
- If the participant seeks assistance and/or continues to be distressed, terminate the research activity.
- All adverse events must be reported to the University of Adelaide and/or the Department of Education and Child Development – speak to Amber Halliday in the first instance.

#### 2. Social harms

To guard against social harms, we recommend selecting participants with sensitivity and to try to be inclusive of students of;

- all ages
- all abilities
- all ethnicities
- all personalities and friendship groups.

It is important for researchers to include participants from a wide range of friendship groups – although it's tempting, try not to *only* talk to your mates!

You should also treat data with confidentiality and make sure it is recorded on an anonymous basis. Let the participant know that you take confidentiality and anonymity seriously –you should let them see the data you record on your data recording sheets.

- To be discussed in student researcher meeting;  
In what other ways to you suggest we protect participants from social harms?

.....  
...  
  
.....  
...  
  
.....  
...  
  
.....  
...  
  
.....  
...  
  
.....  
...

#### REMINDERS: Other ethical obligations

- These are all noted on your data record template.
- All participants should be offered a copy of the appropriate Participant Information Sheet which has the relevant complaints procedure and information on where to seek further help on the back.
- Participants under the age of 13 are considered too young to take part. Check the age of any year 8 students before you begin and make sure they are 13 or over.
- Participants are free to withdraw at any time – you must let them.
- Make sure you seek verbal consent from *every* participant before you begin and record it by ticking the box on your data sheet.
- Participants may be known to you, but you must ensure their data is recorded with only demographic codes eg. 'Mother of year 11 male', 'Female student 14, year 10'. Make sure they know/can see that you are doing this. You are ethically bound to not re-identify them at any stage.
- Practice the information you will give participants when you approach them;  
*"Hi, my name is ..... and I am part of a team that is researching wellbeing at Blackwood High. Is it ok to ask you a few questions? This will be voluntary and you can withdraw at any time. It should take between 5-10 minutes. Your feedback will be recorded anonymously and will help the school help its students to achieve greater wellbeing. Do I have your consent?"*

## PARTICIPANT INFORMATION SHEET – General

**PROJECT TITLE:** Using Participatory Action Research to Develop Effective Positive Education for Australian Students

**PRINCIPAL INVESTIGATOR:** Professor Deborah Turnbull

**STUDENT RESEARCHER:** Amber Halliday

**STUDENT'S DEGREE:** PhD

Dear BHS Community Member,

You are being invited to participate in a research project aimed to enable BHS students and the wider school community identify / adapt / develop a Positive Education Strategy (PES) for Blackwood High School (BHS). This is undertaken using *Participatory Action Research* where school students, staff and parents are empowered to research and gain feedback from their community to come up with a plan of action, instead of being 'researched' and others making decisions on their behalf. In this process of consultation and collaboration, it is hoped that the BHS community will help 'student researchers' find the best PES for students.

Student researchers will be consulting the BHS community (other students, parents, teachers) in short interviews and/or surveys, lasting up to 10 minutes. Any feedback you give in this consultative process is voluntary and will be anonymous. While you may be known to the student researcher, they have strict protocols regarding the recording of any data as only 'Male student, year 12' or 'Mother of year 10 female student' for example. In addition to anonymity in data coding, you will be asked for verbal consent and are free to withdraw at any time.

Potential benefits include finding the best Positive Education curriculum for BHS. While there are few foreseeable risks, support will be available if any participant experiences any distress – for example, University of Adelaide researchers include registered and provisional psychologists and BHS student counsellors are on hand. De-identified raw data from this project will be securely stored on University of Adelaide servers and kept for five years as per the Australian Code for the Responsible Conduct of Research. Findings from this project may be published in academic journals or the mainstream media (without any identifying information).

### **Who do I contact if I have questions about the project?**

Questions, complaints or concerns about the project can be directed to Deputy Principal David Garrett, Assistant Principal Jarrod Chave or Amber Halliday on 8313 5007 or [amber.halliday@adelaide.edu.au](mailto:amber.halliday@adelaide.edu.au). If you wish to speak with an independent person, contact details are on the back of this sheet.

**Many thanks; I hope you choose to be part of this exciting and beneficial research.**

Yours sincerely,

**Amber Halliday**

PhD Candidate, School of Psychology

University of Adelaide

## Further Information & Contacts

### Information:

The following study has been reviewed and ethically approved:

PROJECT DETAILS	
Project Title	Developing and Implementing Effective Positive Education for Australian Students
Researcher's name	Amber Halliday
Degree being sought	PhD
Contact details	<a href="mailto:amber.halliday@adelaide.edu.au">amber.halliday@adelaide.edu.au</a> (08) 8313 5007
Ethical Approvals	University of Adelaide: 15/18 Department of Education & Child Development: CS/15/00004-1.6

This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (see <http://www.nhmrc.gov.au/publications/synopses/e72syn.htm>)

It is important that people participating in approved projects have an independent and confidential reporting mechanism which they can use if they have any worries or complaints about that research. Details follow;

### Complaints:

1. If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the project co-ordinator:

Project Coordinator	
Name	Professor Deborah Turnbull
Phone	08 31 31229

2. If you wish to discuss with an independent person matters related to:
  - making a complaint, or
  - raising concerns on the conduct of the project, or
  - the University policy on research involving human participants, or
  - your rights as a participant,

Please contact the Chair of the School of Psychology's Human Research Ethics Subcommittee on phone (08) 8313 4936 or by email to [paul.delfabbro@adelaide.edu.au](mailto:paul.delfabbro@adelaide.edu.au)

- Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

### Assistance:

If a blackwood high school student experiences any emotional distress from their participation, they can speak to one of the school's Student Counsellors, their Care Group teacher, a University of Adelaide researcher, their Year Level Leader or they can contact The Kids Helpline on 1800 55 1800 or at [www.kidshelp.com.au](http://www.kidshelp.com.au)

All other participants can speak to a BHS counsellor, a University of Adelaide researcher or contact Lifeline on 13 11 14 or at [www.lifeline.org.au](http://www.lifeline.org.au)



# Data Record

1. Approach a wide range of participants to ensure a mix of genders, ages, abilities and friendship groups.
  - Ensure participant is over the age of 13.
2. Introduce yourself, explain the research you are doing and how it may benefit Blackwood High School...

*"Hi, my name is ..... and I am part of a team that is researching wellbeing at Blackwood High. Is it ok to ask you a few questions? This will be voluntary and you can withdraw at any time. It should take between 5-10 minutes. Your feedback will be recorded anonymously and will help the school help its students to achieve greater wellbeing."*

3. Offer a Participant Information Sheet and allow time for its' reading.
4. *"Do I have your consent?"* and record this below.
5. *"Just to code your data with something other than your name, can you please give me your age?"* Write down below and let the participant see this.
  - If they are a student, record their year level.
  - If a parent, ask if they have a son or daughter and what age. If they have more than one at the school, record their eldest in the template and their other children in the spare boxes below.

**Participant code;**

Verbal consent given? Yes ☐

Participant Information Sheet offered? Yes ☐

Male <input type="checkbox"/>	Age.....	BHS Student <input type="checkbox"/>	If student, year .....	
Female <input type="checkbox"/>		Parent <input type="checkbox"/>	If parent, of daughter-- son-----	Year..... <input type="checkbox"/>
		BHS Staff <input type="checkbox"/>		
		BHS Community member <input type="checkbox"/>		

## DATA RECORD CHEAT SHEET

- Wellbeing is feeling good & functioning well.
- Things that help wellbeing and things that act as a barrier can occur on different levels.



“What *helps* foster wellbeing in your life?

.....

.....

.....

.....

“What are the *barriers* to wellbeing in your life?

.....

.....

.....

.....

What would you suggest to help increase your wellbeing?

.....

.....

.....


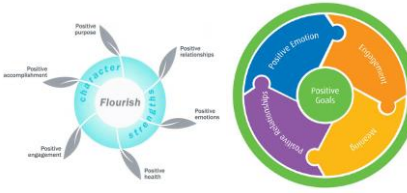



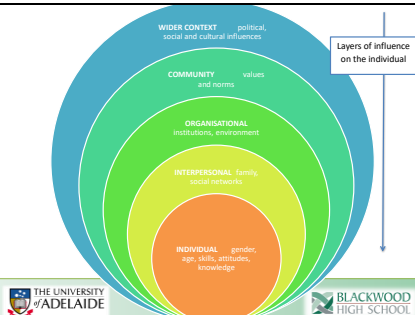


.....

.....

.....








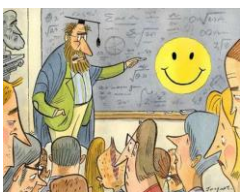















.....

## Workshop 3

 <p style="text-align: center;"><b>Positive Education @ BHS</b> Workshop 3</p> <p style="text-align: center;">Amber Halliday University of Adelaide</p>	 
<p style="text-align: center;"><b>Definitions</b></p> <ul style="list-style-type: none"> <li>• Positive Education Practices which build skills for &amp; foster wellbeing</li> <li>• Wellbeing Feeling good + functioning well</li> </ul> 	<p style="text-align: center;"><b>Workshop 3</b></p> <ul style="list-style-type: none"> <li>• Barriers &amp; Facilitators of Wellbeing @ BHS – What did you find?</li> <li>• Research Task – How should we do this one?</li> </ul> 
 	<p style="text-align: center;"><b>Research Task</b></p> <ul style="list-style-type: none"> <li>• Which aspects of wellbeing are important to BHS? <ul style="list-style-type: none"> <li>– Positive emotion</li> <li>– Engagement</li> <li>– Relationships</li> <li>– Meaning</li> <li>– Accomplishment</li> <li>– Character</li> <li>– Positive Health</li> <li>– Resilience / optimism</li> <li>– Addressing negative factors</li> </ul> </li> </ul> 

Copyright © 2019 Amber Halliday. All rights reserved.

## Workshop 4

<p>   </p> <p>Positive Education @ BHS Workshop 4</p> <p>Amber Halliday University of Adelaide</p>	<h3>Assembly Essentials</h3> <ul style="list-style-type: none"> <li>• <b>Positive education</b> fosters and teaches the skills for wellbeing.</li> <li>• <b>Wellbeing</b> is feeling good and functioning well.</li> <li>• There are <b>benefits</b> to wellbeing beyond just being happy.</li> <li>• Wellbeing is <b>learnable</b> and can be built.</li> <li>• The framework we use to measure and to think about wellbeing is <b>PERMA +</b>.</li> </ul> <p>   </p>
<h3>Workshop 4</h3> <ul style="list-style-type: none"> <li>• Assembly</li> <li>• PEPs?</li> <li>• Wider communication strategy &amp; skills</li> <li>• Holiday research tasks</li> </ul>  <p>   </p>	<h3>Positive Education Practices?</h3>  <p>   </p>
<h3>Wider communication strategy</h3>  <p>   </p>	<h3>Communication skills</h3> <ul style="list-style-type: none"> <li>• Definitions &amp; Introduction</li> <li>Summary of             <ul style="list-style-type: none"> <li>- aim &amp; benefits of project</li> <li>- voluntary</li> <li>- anonymous</li> <li>----- verbal consent.</li> </ul> </li> <li>• Verbal communication</li> <li>• Non-verbal communication</li> </ul> <p>   </p>
<h3>Holiday Research Tasks</h3> <ol style="list-style-type: none"> <li>1. Smiling Mind - <a href="http://smilingmind.com.au/">http://smilingmind.com.au/</a></li> </ol>  <ol style="list-style-type: none"> <li>2. Artefacts + Field notes</li> </ol> <p>   </p>	<h3>Holiday Research Task</h3> <p>Are there any artefacts that you think may impact on wellbeing within the BHS community?</p> <p>Eg. school uniform, mobile phone app, mainstream media item.</p> <p>➤ Make field notes &amp; bring the artefact to next session if possible.</p> <p>   </p>
<h3>Holiday Research Tasks</h3> <p>Field notes</p> <ul style="list-style-type: none"> <li>- as soon as possible</li> <li>- record date &amp; time</li> <li>- use anonymity</li> </ul>  <p>   </p>	

## ESSENTIAL INFORMATION SUMMARY

### Workshop 4

- **Positive education** fosters and teaches the skills for wellbeing.
- **Wellbeing** is feeling good and functioning well.
- There are **benefits** to wellbeing beyond just being happy.
  - Academic and career success
  - Better personal relationships
  - Less psychological/mental ill-being.<sup>7</sup>
- Positive education is **not** just being happy or positive all the time. It is also about cultivating the skills for resilience and optimal functioning<sup>8</sup>, responding to and preventing psychological/mental ill-being.
- Wellbeing is **learnable** and can be built.<sup>9</sup>
- The framework we use to measure and to think about wellbeing is **PERMA +**.
- We (the action research group) are helping the school to find the best positive education curriculum for us (the whole student population).

### PERMA+

- **P** – Positive emotion

Positive emotions, pleasurable experiences, happiness and satisfaction with one's life.

- **E** – Engagement

Taking part in activities and challenges that are motivating and absorbing. Experiencing intense concentration, absorption, and focus.

- **R** – Relationships

Being connected to others, having social contact and social support.

- **M** – Meaning

Having purpose in life, believing that life is worthwhile.

- **A** – Accomplishment

Working towards worthwhile accomplishments and valued goals.

- **+** “plus”






















Refers to additional aspects of feeling good and functioning

---




















<sup>7</sup> Can use either 'psychological' or 'mental' – whichever you think is best.

<sup>8</sup> 'Optimal functioning' can also be thought of as 'flourishing'.





## Workshop 5

<p>   </p> <p style="text-align: center;"> <b>Positive Education @ BHS</b>          Workshop 5       </p> <p style="text-align: center;">         Amber Halliday          University of Adelaide       </p>	<p style="text-align: center;"><b>Workshop 5</b></p> <ul style="list-style-type: none"> <li>• Holiday Research           <ul style="list-style-type: none"> <li>- Smiling Mind</li> <li>- Artefacts</li> </ul> </li> <li>• Assembly communication</li> <li>• Focus Groups           <ul style="list-style-type: none"> <li>- Research questions</li> </ul> </li> </ul> <p style="text-align: right;">  </p> <p>   </p>
<p><b>Holiday Research Task – Smiling Mind</b></p> <ul style="list-style-type: none"> <li>• Did you do it?</li> <li>• How difficult was it?</li> <li>• Was it enjoyable and/or beneficial?</li> <li>• Would BHS students be up for it?           <ul style="list-style-type: none"> <li>– In class: audio session, debrief, going through the take home activity, subsequent daily mindfulness.</li> <li>– At home: Take home activity.</li> </ul> </li> </ul> <p style="text-align: right;">  </p> <p>   </p>	<p><b>Holiday Research Task - Artefacts</b></p> <p>Are there any artefacts that you think may impact on wellbeing within the BHS community?</p> <p>Eg. school uniform, mobile phone app, mainstream media item.</p> <ul style="list-style-type: none"> <li>➢ Make field notes &amp; bring artefact.</li> <li>➢ Does this result in a new research question?</li> </ul> <p>   </p>
<p><b>Assembly Communication</b></p> <p>  </p> <p>   </p>	<p><b>Assembly Essentials</b></p> <ul style="list-style-type: none"> <li>• <b>Positive education</b> helps you to become your best physical and emotional selves.</li> <li>• <b>Positive Education</b> fosters and teaches the skills for wellbeing.</li> <li>• <b>Wellbeing</b> is feeling good and functioning well.</li> <li>• There are <b>benefits</b> to wellbeing beyond just being happy (better health &amp; longevity, better relationships &amp; behaviour, academic &amp; career benefits).</li> <li>• Wellbeing is <b>learnable</b> and can be built.</li> <li>• The framework we use to measure and to think about wellbeing is <b>PERMA +</b>.</li> </ul> <p>   </p>
<ul style="list-style-type: none"> <li>• <b>P - POSITIVE EMOTION</b> This is feeling and experiencing positive emotions, pleasure, happiness and satisfaction with one's life.</li> <li>• <b>E - ENGAGEMENT</b> This is taking part in activities and challenges that are motivating and absorbing. Experiencing intense concentration, absorption and focus.</li> <li>• <b>R - RELATIONSHIPS</b> This means being connected with others, having social contact and social support.</li> <li>• <b>M - MEANING</b> This refers to having purpose in life and believing that life is worthwhile.</li> <li>• <b>A - ACCOMPLISHMENT</b> This is working towards worthwhile accomplishments and valued goals.</li> <li>• <b>+</b> "Plus" This represents all the additional aspects of feeling good and functioning well.</li> </ul> <p>   </p>	<p style="text-align: center;"><b>Focus Groups</b></p> <ul style="list-style-type: none"> <li>• Years 8 &amp; 10</li> <li>• Mr Tinsley's maths classes</li> <li>• Purposeful / voluntary selection</li> <li>• Ethics</li> <li>• Research Questions...</li> </ul> <p>   </p>
<p style="text-align: center;"><b>Research Questions</b></p> <ul style="list-style-type: none"> <li>• What are barriers and facilitators of wellbeing for students?</li> <li>• Which aspects of wellbeing are important to students / parents / teachers?</li> <li>• What will motivate students to 'buy in' (engage and comply with)?</li> <li>• Would students like to have technology incorporated, e.g. <i>fitbits</i> to track their activity/sleep or mobile phone apps?</li> <li>• Would students be up for mindfulness &amp; meditation?</li> <li>• How important is privacy? Can an English teacher 'mark' a gratitude letter if it is part of English class?</li> <li>• What is the best way to introduce Pos Ed @ BHS?</li> </ul> <p>   </p>	

## Workshop 6

<div>   </div> <h3>Positive Education @ BHS Workshop 6</h3> <p>Amber Halliday University of Adelaide</p>	<h3>Workshop 6</h3> <ul style="list-style-type: none"> <li>Smiling Mind</li> <li>Wellbeing forum at Wirreanda</li> <li>Assembly presentation</li> </ul>  <div>   </div>
<h3>Smiling Mind</h3>  <ul style="list-style-type: none"> <li>How difficult was it?</li> <li>Was it enjoyable and/or beneficial?</li> <li>Would BHS students be up for it? <ul style="list-style-type: none"> <li>In class: audio session, debrief, going through the take home activity, subsequent daily mindfulness.</li> <li>At home: Take home activity.</li> </ul> </li> </ul> <div>   </div>	<h3>Wellbeing forum at Wirreanda</h3> <ul style="list-style-type: none"> <li>Alyssa &amp; Nathaniel <ul style="list-style-type: none"> <li>Did the day result in any ideas to help improve wellbeing @ BHS?</li> </ul> </li> </ul>  <div>   </div>
<h3>Assembly Presentation</h3> <ul style="list-style-type: none"> <li>William, Daniel.</li> <li>Essentials + Student research + PERMA+ <ul style="list-style-type: none"> <li>Socratic method with a teacher/student?</li> <li>Multimedia presentation?</li> </ul> </li> </ul> <div>   </div>	<h3>Assembly Essentials</h3> <ul style="list-style-type: none"> <li><b>Positive education</b> helps you to become your best physical and emotional selves.</li> <li><b>Positive Education</b> fosters and teaches the skills for wellbeing.</li> <li><b>Wellbeing</b> is feeling good and functioning well.</li> <li>There are <b>benefits</b> to wellbeing beyond just being happy (better health &amp; longevity, better relationships &amp; behaviour, academic &amp; career benefits).</li> <li>Wellbeing is <b>learnable</b> and can be built.</li> <li>The framework we use to measure and to think about wellbeing is <b>PERMA +</b>.</li> </ul> <div>   </div>
<h3>The student research group;</h3> <ul style="list-style-type: none"> <li>has researched barriers and facilitators to wellbeing within the BHS community.</li> <li>has trialled some positive education programs and given feedback.</li> <li>has given ideas for a BHS positive education logo.</li> <li>has compiled the positive education 'essential' info into a page for the 2016 diary to be given to every student in the school.</li> <li>is taking a deeper look at what may motivate students to participate in Positive Education.</li> <li>is introducing Positive Education to the students at assemblies in 2016</li> <li>has helped 'the school' to understand students' point of view.</li> </ul> <div>   </div>	<ul style="list-style-type: none"> <li><b>P</b> - POSITIVE EMOTION: feeling and experiencing positive emotions, pleasure, happiness and satisfaction with one's life.</li> <li><b>E</b> - ENGAGEMENT: taking part in activities and challenges that are motivating and absorbing. Experiencing intense concentration, absorption and focus.</li> <li><b>R</b> - RELATIONSHIPS: being connected with others, having social contact and social support.</li> <li><b>M</b> - MEANING: having purpose in life and believing that life is worthwhile.</li> <li><b>A</b> - ACCOMPLISHMENT: working towards worthwhile accomplishments and valued goals.</li> <li>+ "Plus" This represents all the additional aspects of feeling good and functioning well.</li> </ul> <div>   </div>

Copyright © 2019 Amber Halliday. All rights reserved.

Focus Groups	Research Questions
<ul style="list-style-type: none"> <li>• Years 8 &amp; 10</li> <li>• Nathaniel, Yaqi?</li> <li>• Mr Tinsley's maths classes</li> <li>• Purposeful / voluntary selection</li> <li>• Research Questions...</li> </ul>	<ul style="list-style-type: none"> <li>• What are barriers and facilitators of wellbeing for students?</li> <li>• Which aspects of wellbeing are important to students / parents / teachers? <ul style="list-style-type: none"> <li>– P, E, R, M, A, PA, Nutrition, Optimism, Character, resilience?</li> </ul> </li> <li>• What will motivate students to 'buy in' (engage and comply with)? <ul style="list-style-type: none"> <li>– Activities being fun</li> <li>– Knowing the benefit</li> <li>– Using technology</li> <li>– Having a say in the curriculum</li> </ul> </li> <li>• How important is privacy? Can an English teacher 'mark' a gratitude letter if it is part of English class?</li> </ul>
 	 

Copyright © 2019 Amber Halliday. All rights reserved.



## APPENDIX 6

### Reliable change indices (RCI) statistics and calculations

#### RCI - EPOCH

##### Overall Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.924	.923	20

Change must be greater than  
 $1.96 * SD@T_1 * \sqrt{2} * \sqrt{(1 - \text{Cronbach's alpha } @T_1)}$

##### T1 Engagement Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.856	.861	4

For E, change must be greater than  
 $1.96 * .86391 * \sqrt{2} * \sqrt{(1-.856)}$   
**=0.90870060322**

##### T1 Perseverance Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.804	.804	4

For P, change must be greater than  
 $1.96 * .72270 * \sqrt{2} * \sqrt{(1-.804)}$   
**= 0.88686427244**

##### T1 Optimism Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.771	.772	4

For O, change must be greater than  
 $1.96 * .79610 * \sqrt{2} * \sqrt{(1-.771)}$   
**= 1.05598180278**

##### T1 Connectedness Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.867	.879	4

For C, change must be greater than  
 $1.96 * .74093 * \sqrt{2} * \sqrt{(1-.867)}$   
**= 0.74898663685**

##### T1 Happiness Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.793	.797	4

For H, change must be greater than  
 $1.96 * .73150 * \sqrt{2} * \sqrt{(1-.793)}$   
**= 0.92250891619**

### Descriptive Statistics

Time 1 EPOCH	N	Minimum	Maximum	Mean	Std. Deviation
Engagement	19	1.50	5.00	3.2368	.86391
Perseverance	19	2.25	4.75	3.5921	.72270
Optimism	19	2.50	5.00	3.7105	.79610
Connectedness	19	2.75	5.00	4.3289	.74093
Happiness	19	2.50	4.75	3.9211	.73150
Valid N (listwise)	19				

### Reliability - EPOCH T2

#### E (T2) Reliability Statistics

Cronbach's	
Alpha	N of Items
.704	4

#### P (T2) Reliability Statistics

Cronbach's	
Alpha	N of Items
.733	4

#### O (T2) Reliability Statistics

Cronbach's	
Alpha	N of Items
.850	4

#### C (T2) Reliability Statistics

Cronbach's	
Alpha	N of Items
.684	4

#### H (T2) Reliability Statistics

Cronbach's	
Alpha	N of Items
.829	4

### RCI - General Self-efficacy

#### T1 Reliability Statistics

Cronbach's	
Alpha	N of Items
.881	10

#### T2 Reliability Statistics

Cronbach's Alpha	N of Items
.843	10

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Self-efficacy mean	19	2.22	3.90	3.1696	.51199
Valid N (listwise)	19				

Change must be greater than  
 $1.96 * .51199 * \sqrt{2} * \sqrt{(1 - .881)}$   
**= 0.48956011537**

### RCI – SEARS-A

#### T1 Reliability Statistics

Cronbach's Alpha	N of Items
.712	12

#### T2 Reliability Statistics

Cronbach's Alpha	N of Items
.765	12

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Social and emotional assets total	19	17	31	26.05	4.075
Valid N (listwise)	19				

Change must be greater than  
 $1.96 * 4.075 * \sqrt{2} * \sqrt{(1 - .712)}$   
**= 6.06170680122**

### RCI – SEARS-T

#### T1 Reliability Statistics

Cronbach's Alpha	N of Items
.955	12

#### T2 Reliability Statistics

Cronbach's Alpha	N of Items
.959	12

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Teacher rated social and emotional assets T1	10	9.00	32.00	24.4000	8.28922
Valid N (listwise)	10				

Change must be greater than  
 $1.96 * 8.28922 * \sqrt{2 * \sqrt{1 - .955}}$   
**= 4.87406136**

## APPENDIX 7

### PEPP Session 1

#### Information sheet for students



## Positive Education

### Student Information

Dear Student,

Blackwood High School will be introducing Positive Education in the whole school in the next few years and to make sure we do it well, we're trialling a few things in Year 9 this year. All Year 9 students will be part of this Positive Education trial in their Care Group time. We've prepared the program contents with help from experts at the University of Adelaide. They will run a few questionnaires during the year, and will team up with the SRC to ask you what you thought of it at the end.

Positive Education aims to give you the skills for feeling good and functioning well. Many schools in Adelaide already use Positive Education in their teaching with encouraging outcomes:

*"I was fascinated by Positive Education, you can actually get a lot out of it. It helped me to learn about how people think and it helped develop techniques for study, for sport, that sort of thing. I could see it help in sport as school athletes are subject to a fair bit of pressure, but Positive Education skills helped them remain positive, resilient, hopeful, and ready for success. The things I learned in Positive Education, help me now - I have a better awareness of myself and a better understanding of what keeps me motivated."*

18 year-old male Positive Education participant

#### BHS Year 9 Positive Education Trial

- Session 1. Introduction and Three Good Things
- Session 2. Gratitude Letter, Meaning through Photography guide
- Session 3. Revisit Meaning through Photography, Counting Kindness guide
- Session 4. MoodGYM: Sign up, 'Getting started' & Feelings module
- Session 5. MoodGYM: Thoughts module
- Session 6. MoodGYM: Unwarping module
- Session 7. MoodGYM: De-stressing module
- Session 8. MoodGYM: Relationships module & 'Wrapping it up'
- Session 9. Best possible selves

*MoodGYM* is an online program developed by the Australian National University for 15 - 25 year olds. We are using it help you learn about your thoughts and feelings; giving you skills to recognise and repeat the good ones and techniques to challenge the unhelpful ones.

We'll also do some *Positive Education Practices* (PEPs). These activities aim to help you to feel positive emotion, gratitude and optimism, and to start you thinking about the meaning you have in your life.

If you'd like any further help with issues that Positive Education raises, please refer to the back of this sheet. We hope you enjoy Positive Education and we look forward to hearing your feedback.

Amber Halliday  
PhD Candidate  
University of Adelaide

Lee Knight  
Assistant Principal

Marion Coady  
Principal



If you need assistance, help can be found;

#### In person

- You can access the BHS Student Counsellor who is on hand.
- Your Local GP is also a good starting point.
- Headspace has an office at 173 Wakefield Street, Adelaide, P: 1800 063 267.
- You can access reasonably priced psychological services at Flinders University Department of Psychology Clinic <http://www.flinders.edu.au/sabs/psychology/services/clinic/>

#### On the phone

- The Kids helpline can be accessed on 1800 55 1800.
- Beyond Blue have people you can talk to 24/7 on 1300 22 46 36.
- You can call Headspace on 1800 650 890.

#### Online

- The Kids helpline can be accessed at <https://kidshelpline.com.au/teens/>
- Beyond Blue have email and online chat options <https://www.beyondblue.org.au/get-support/get-immediate-support>
- You can chat to e-Headspace online at <https://www.eheadspace.org.au/>

#### Apps

- Reach Out has a 'Toolbox' which can recommend health and wellbeing apps endorsed by professionals and reviewed by people under 25, tailored to you - <http://au.reachout.com/sites/thetoolbox>. It includes apps to help you with thoughts and emotions, relationships and dealing with tough times.

# Positive Education

Building and fostering wellbeing in students

Produced by the University of Adelaide exclusively for Blackwood High School. Not for distribution.

## Session 1

1. Introduction to positive education
2. PEP: Three Good Things

## Positive Education


- Aims to increase a young person's wellbeing.
- Wellbeing = feeling good + functioning well
- Wellbeing has benefits above and beyond happiness.
- PERMA+

## PERMA+

- **POSITIVE EMOTION** is feeling and experiencing positive emotions like pleasure, joy and happiness. It's being satisfied with your life.
- **ENGAGEMENT** is taking part in activities and challenges that are motivating and absorbing. It is experiencing intense concentration, absorption and focus.
- **RELATIONSHIPS** means being connected with others, having social contact, and social support.
- **MEANING** is having purpose in life and believing that life is worthwhile.
- **ACCOMPLISHMENT** involves working towards worthwhile achievements and valued goals.
- **'+' Plus** represents all the additional aspects of feeling good and functioning well, such as exercise, nutrition and sleep.

## Positive Education Trial


- PEPs – positive education practices.
- MoodGYM for thinking skills.




## Class Norms

- Respect others and their opinions.
- Everyone has the right to speak.
- Everyone has the right not to offer an opinion (right to pass).

## Positive emotion






- Add video

## Three Good Things


Keep a 3GT journal

- i. Write 3 good things each day for a week.
- ii. Next to each good thing, write one reflection.



## Gives you wings

- Keep the 3GT Journal, bring to next weeks' session.
- Discuss some good things with your parents.



# 3GT Journal

- Write down three good things that happened each day for a week.  
These can be big or small. They can be events that went well, things of beauty or something that you're grateful for. For example;  
'I got a B+ on the English assignment I thought I had failed.'  
'Mum said I did a really good job today driving to school.'  
'The girl/guy I like sat next to me on the bus, even though there were other free seats around.'
- Next to each positive event written, they share/write a reflection on one of the following questions:
  - 'Why did this good thing happen?'
  - 'What does this mean to you?'
  - 'How can you increase the likelihood of having more of this good thing in the future?'

Write below three good things that happened in your life each day. Write at least one reflection for each one.

My Good Thing	Why did this happen to me?	What does it mean to me?	How can I increase the likelihood of having more of this good thing in the future?
Dad taught me how to change a tire on the car.		It made me feel grown-up (I'm close to getting my L's) and I felt confident in my capabilities once I learned how to.	
I went for a walk in the park when I got home today instead of doing homework straight away.	I've got my school work under control, so I felt like I could.		
My hockey team won our game today.			I can keep fit and keep improving my skills in order to contribute to the team.

Wednesday			
My Good Thing	Why did this happen to me?	What does it mean to me?	How can I increase the likelihood of having more of this good thing in the future?
1.			
2.			
3.			
Thursday			
My Good Thing	Why did this happen to me?	What does it mean to me?	How can I increase the likelihood of having more of this good thing in the future?
1.			
2.			
3.			



Friday			
My Good Thing	Why did this happen to me?	What does it mean to me?	How can I increase the likelihood of having more of this good thing in the future?
1.			
2.			
3.			

Saturday			
My Good Thing	Why did this happen to me?	What does it mean to me?	How can I increase the likelihood of having more of this good thing in the future?
1.			
2.			
3.			

Sunday			
My Good Thing	Why did this happen to me?	What does it mean to me?	How can I increase the likelihood of having more of this good thing in the future?
1.			
2.			
3.			

# PERMA+

**POSITIVE EMOTION** is feeling and experiencing positive emotions like pleasure, joy and happiness. It's being satisfied with your life.

**ENGAGEMENT** is taking part in activities and challenges that are motivating and absorbing. It is experiencing intense concentration, absorption and focus.

**RELATIONSHIPS** means being connected with others, having social contact, and social support.

**MEANING** is having purpose in life and believing that life is worthwhile.

**ACCOMPLISHMENT** involves working towards worthwhile achievements and valued goals.

**'+' Plus** represents all the additional aspects of feeling good and functioning well, such as exercise, nutrition and sleep.





## wellbeing:

You can find help

### In person

- the BHS Student Counsellor
- Your Local GP
- *Headspace* - 173 Wakefield Street, Adelaide, P: 1800 063 267.
- *Flinders University Department of Psychology Clinic* - Sturt Road, Bedford Park P: 8201 2311, fupc@flinders.edu.au

### On the phone

- The *Kidshelpline* - 1800 55 1800.
- *Beyond Blue* - 24/7 help on 1300 22 46 36.
- *Headspace* - 1800 650 890.

### Online

- The *Kidshelpline* - [kidshelpline.com.au](http://kidshelpline.com.au)
- *Beyond Blue* have email and online chat options  
[beyondblue.org.au/get-support/get-immediate-support](http://beyondblue.org.au/get-support/get-immediate-support)
- *e-Headspace* online chat at [eheadspace.org.au](http://eheadspace.org.au)

### Apps

*Reach Out* have a 'Toolbox' of apps reviewed by young people  
[au.reachout.com/sites/thetoolbox](http://au.reachout.com/sites/thetoolbox)

## APPENDIX 8

### PEPP teacher training materials used in study 2

#### Training outline

##### Preparatory Materials

- a. Reminder emails
- b. Videos – Benefits of happiness, PAR intro, gratitude, broaden & build theory
- c. Handout - Outline of Positive Education basics (definition, framework, benefits)

##### Reminder email 1

- Quick explanation about wellbeing v. happiness
- Reminder to read the hand out.
- [https://www.youtube.com/watch?list=PLzvRx\\_johoA\\_PV8bS75cTBSkaGZbmFQ4z&v=IkMHZ7mchVo](https://www.youtube.com/watch?list=PLzvRx_johoA_PV8bS75cTBSkaGZbmFQ4z&v=IkMHZ7mchVo) benefits of happiness
- Introduction video made by 2015 SRC

##### Session 1. Intro to Positive Education

- Review: definitions, benefits, PERMA+
- What has already been happening at BHS? (Measurement, PAR)
- Rationale: why year 9, why this school, why this content? -data
- PEPs
  - Implicit, explicit and school wide.
  - PEPs involved in PET.
  - Do Three Good Things as an example.
- Introduce MoodGYM – teachers to do this before next session \*homework. How can we consolidate this learning?
- Questions

##### Reminder email 2

- Read handout!!!!
- Science of gratitude  
[https://www.youtube.com/watch?v=oHv6vTKD6lg&index=1&list=PLzvRx\\_johoA\\_PV8bS75cTBSkaGZbmFQ4z](https://www.youtube.com/watch?v=oHv6vTKD6lg&index=1&list=PLzvRx_johoA_PV8bS75cTBSkaGZbmFQ4z)
- Broaden & build theory explanation + 3 videos
- [https://www.youtube.com/watch?v=Ds\\_9Df6dK7c](https://www.youtube.com/watch?v=Ds_9Df6dK7c)
- <https://www.youtube.com/watch?v=Z7dFDHzV36g>
- [https://www.youtube.com/watch?v=hKggZhYwoys&ebc=ANyPxKrmXfyIzJNkV0vPYN1jtcbaOwSyW5GACVDhYlbXhblbFtZDqCJI1\\_fVcdpv1eZiAYlhtOQhwsglutUKkQXh0yo2iRcNA](https://www.youtube.com/watch?v=hKggZhYwoys&ebc=ANyPxKrmXfyIzJNkV0vPYN1jtcbaOwSyW5GACVDhYlbXhblbFtZDqCJI1_fVcdpv1eZiAYlhtOQhwsglutUKkQXh0yo2iRcNA)
- MoodGYM reminder

##### Session 2. Positive affect and positive emotions

- Class Norms.
- Adverse event protocol.
- Workshop on converting Proposed PEPs into lesson plans
- Gratitude letter \*homework

##### Reminder email 3

- Gratitude letter
- Mindset quiz - <http://mindsetonline.com/testyourmindset/step1.php>

### **Session 3. The broader scope of Positive Education**

- Overflow
- MoodGYM - Discussion of the best way to consolidate this learning
- Examination of E,R,M,A & + and examples of practices that may be adopted in coming years.
- Discussion of other positive education concepts eg. mindfulness, character strengths, media literacy, healthy fuels (eating, sleeping), physical activity
- Boosters.

# Positive Education



@ Blackwood High School

## The Background

### Positive education

Positive education has been defined as:

- "education for both traditional skills and for happiness" (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009),
- "applied positive psychology in education" (Green, Oades, & Robinson, 2011),
- "bring(ing) together the science of Positive Psychology with best practice teaching to encourage and support individuals, schools and communities to flourish" (Geelong Grammar School)

Four our purposes: Positive education aims to foster and give skills for wellbeing in students.

### Wellbeing

Inconveniently, there is no global definition of what wellbeing is (Coleman, 2009), but there is agreement it consists of elements of hedonia (feeling good) and eudaimonia (functioning well) (Huppert, 2009). Having a high level of wellbeing is often referred to as 'optimal human functioning' or 'flourishing'.

**Positive education aims to foster and give skills for feeling good and functioning well in students.**

### **Benefits of wellbeing**

Wellbeing has been found to associate with many beneficial outcomes in life;

- i. better physical health and life expectancy (Diener & Chan, 2011)
- ii. reduced psychopathology (Sin & Lyubomirsky, 2009)
- iii. educational success and academic achievement (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Howell, 2009; Suldo, Thalji, & Ferron, 2011; Waters, 2011)
- iv. enhanced work performance and fewer absences (Keyes, 2007)
- v. pro-social behaviour (Huppert & So, 2013).

**Positive education is complementary to academic achievement.**

### **Prevention**

- Almost half of Australians aged 16–85 years (or 7.3 million people), at some point in their lifetime, experience a mental disorder and the annual cost of mental illness to Australia is in the order of \$20 billion (Australian Bureau of Statistics, 2008).
- Suicide is the leading underlying cause of death among persons aged 15–44 (Australian Institute of Health and Welfare, 2016).
- Major mental disorders most commonly have their onset during adolescence and early adulthood (McGorry, 2013).
- Building wellbeing through positive education shows promise to, not only treat psychopathology, but to prevent it (Duckworth, Steen, & Seligman, 2005; Jané-Llopis, Barry, Hosman, & Patel, 2005; Saxena, Jané-Llopis, & Hosman, 2006; Seligman, 2008).
- It has been suggested that high levels of wellbeing act as a protective factor that provide a buffer against adverse life events (Suldo & Huebner, 2004).

### **Universal Intervention**

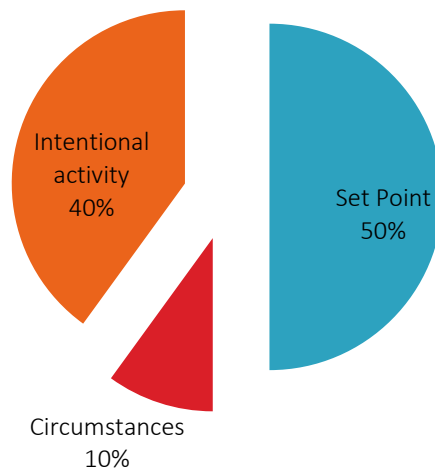
The idea is that positive education, done universally by all students in a population, will shift the curve to the right and many will move out of the mental disorder category just as many more will experience optimal psychological functioning. Universal intervention is also the preferred model in schools as it precludes the stigmatization of participants in a targeted program (Nehmy & Wade, 2015).

**Positive education, done universally in a school, shows promise as a way to prevent mental illness.**

### **Determinants of wellbeing**

Positive education can impact on the 40% of factors that are not controlled by genetic predisposition (one's 'set point') or circumstance (for example, one's socio-economic status

or experience of life events). It does this by supporting 'intentional activities' or Positive Education Practices (PEPs).



(Adapted from Sheldon & Lyubomirsky, 2007)

### Positive Education Practices - PEPs

These relatively simple intentional activities (Lyubomirsky & Layous, 2013) can take place in the classroom (explicit teaching), can be incorporated into lessons, sports coaching or everyday interactions (embedded strategies) or be school wide practices such as healthy eating or physical activity interventions. There is good quality evidence that they 'work' ie. they increase wellbeing and decrease depressive symptoms (see meta-analyses by Bolier et al., 2013; Sin & Lyubomirsky, 2009). A well-known example of a PEP is the 'Three Good Things' exercise.

**Positive Education Practices (PEPs) have the potential to increase a person's wellbeing and decrease their depressive symptoms.**

### Wellbeing Frameworks

There are many theories and measures of wellbeing. The one that is overwhelmingly used in Australian Education is Martin Seligman's PERMA (Seligman, 2011). Schools and organisations have often added their own components of wellbeing to PERMA. Geelong grammar has added positive health and character strengths, SAHMRI adds physical activity, sleep and optimism. Having the '+' gives BHS options to acknowledge other characteristics that are important for wellbeing such as nutrition, physical activity and sleep.



## P.E.R.M.A.+

There are components of wellbeing that can be measured and can be built. For example;

<u>P</u> ositive emotion	POSITIVE EMOTION is feeling and experiencing positive emotions like pleasure, joy and happiness. It's being satisfied with your life.
<u>E</u> ngagement	ENGAGEMENT is taking part in activities and challenges that are motivating and absorbing. It is experiencing intense concentration, absorption and focus.
<u>R</u> elationships	RELATIONSHIPS means being connected with others. Having social contact, and social support.
<u>M</u> eaning	MEANING is having purpose in life and believing that life is worthwhile.
<u>A</u> ccomplishment	ACCOMPLISHMENT involves working towards worthwhile achievements and valued goals.
<b>+</b>	'PLUS' refers to additional characteristics that are widely acknowledged are beneficial for wellbeing such as nutrition, physical activity and sleep.






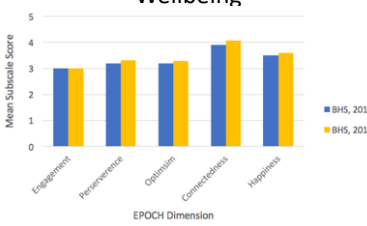
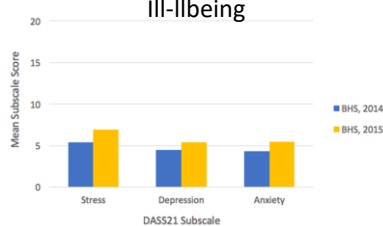
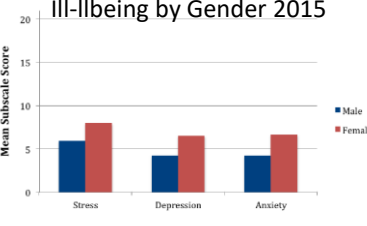
Blackwood High School uses PERMA+ as its conceptual framework and EPOCH (PERMA for adolescents) as its measurement.


















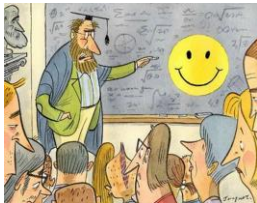




## References

- Australian Bureau of Statistics. (2008). National survey of mental health and wellbeing: Summary of results. Canberra: Commonwealth of Australia.
- Australian Institute of Health and Welfare. (2016). Leading Causes of Death 2011-2013. Retrieved 3/3, 2016, from <http://www.aihw.gov.au/deaths/leading-causes-of-death/>
- 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), 119.
- Caprara, G. V., Barbaranelli, C., Pastorelli, C., Bandura, A., & Zimbardo, P. G. (2000). Prosocial Foundations of Children's Academic Achievement. *Psychological Science*, 11(4), 302-306.
- Coleman, J. (2009). Well-being in schools: empirical measure, or politician's dream? *Oxford Review of Education*, 35(3), 281-292.
- Diener, E., & Chan, M. Y. (2011). Happy people live longer: Subjective well-being contributes to health and longevity. *Applied Psychology: Health and Well-Being*, 3(1), 1-43.
- Duckworth, A. L., Steen, T. A., & Seligman, M. E. (2005). Positive Psychology in Clinical Practice. *Annual Review of Clinical Psychology*, 1, 629-651.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions. *Child Development*, 82(1), 405-432.
- Green, S., Oades, L., & Robinson, P. (2011). Positive Education: Creating flourishing students, staff and schools. *InPsych*.





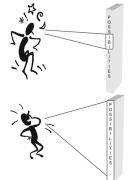














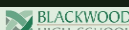



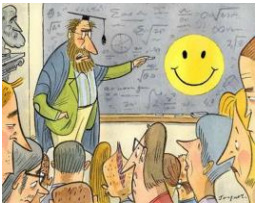


- Howell, A. J. (2009). Flourishing: Achievement-related correlates of students' well-being. *The Journal of Positive Psychology*, 4(1), 1-13.
- Huppert, F. A. (2009). Psychological Well-being: Evidence Regarding its Causes and Consequences†. *Applied Psychology: Health and Well-Being*, 1(2), 137-164.
- Huppert, F. A., & So, T. T. (2013). Flourishing across Europe: Application of a new conceptual framework for defining well-being. *Social Indicators Research*, 110(3), 837-861.
- Jané-Llopis, E., Barry, M., Hosman, C., & Patel, V. (2005). Mental Health Promotion Works: A review. *Global Health Promotion*, 9.
- Keyes, C. L. (2007). Promoting and protecting mental health as flourishing: a complementary strategy for improving national mental health. *American Psychologist*, 62(2), 95.
- Lyubomirsky, S., & Layous, K. (2013). How do simple positive activities increase well-being? *Current Directions in Psychological Science*, 22(1), 57-62.
- McGorry, P. (2013). Prevention, innovation and implementation science in mental health: the next wave of reform. *The British Journal of Psychiatry*, 202(s54), s3-s4.
- Nehmy, T. J., & Wade, T. D. (2015). Reducing the onset of negative affect in adolescents: Evaluation of a perfectionism program in a universal prevention setting. *Behaviour Research and Therapy*, 67, 55-63.
- Saxena, S., Jané-Llopis, E., & Hosman, C. (2006). Prevention of mental and behavioural disorders: implications for policy and practice. *World Psychiatry*, 5(1), 5.
- Seligman, M. E. (2008). Positive health. *Applied psychology*, 57, 3-18.
- Seligman, M. E. (2011). *Flourish: A visionary new understanding of happiness and well-being*. New York: Simon and Schuster.
- 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.
- Sheldon, K. M., & Lyubomirsky, S. (2007). Is it possible to become happier?(And if so, how?). *Social and Personality Psychology Compass*, 1(1), 129-145.
- 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.
- Suldo, S., & Huebner, E. S. (2004). Does life satisfaction moderate the effects of stressful life events on psychopathological behavior during adolescence? *School Psychology Quarterly*, 19(2), 93.
- Suldo, S., Thalji, A., & Ferron, J. (2011). Longitudinal academic outcomes predicted by early adolescents' subjective well-being, psychopathology, and mental health status yielded from a dual factor model. *The Journal of Positive Psychology*, 6(1), 17-30.
- Waters, L. (2011). A review of school-based positive psychology interventions. *The Australian Educational and Developmental Psychologist*, 28(02), 75-90.

## Training Session 1

 <p><b>Positive Education: An introduction</b></p> <p>Session 1</p> <p>BLACKWOOD HIGH SCHOOL THE UNIVERSITY OF ADELAIDE</p>	<p><b>Session 1</b></p> <ul style="list-style-type: none"> <li>• Review</li> <li>• Positive Psychology</li> <li>• What has already been happening at BHS?</li> <li>• Rationale for Positive Education Trial</li> <li>• Positive Education Practices (PEPs)</li> <li>• MoodGYM</li> </ul> <p>BLACKWOOD HIGH SCHOOL THE UNIVERSITY OF ADELAIDE</p>												
<p><b>Review</b></p> <ul style="list-style-type: none"> <li>• Positive education</li> <li>• Wellbeing</li> <li>• Benefits of high wellbeing</li> <li>• PERMA+</li> </ul>  <p>BLACKWOOD HIGH SCHOOL THE UNIVERSITY OF ADELAIDE</p>	 <p>BLACKWOOD HIGH SCHOOL THE UNIVERSITY OF ADELAIDE</p>												
<p><b>Review</b></p> <ul style="list-style-type: none"> <li>• PERMA+</li> </ul> <table border="1"> <tbody> <tr> <td><b>Positive emotion</b></td><td>POSITIVE EMOTION is feeling and experiencing positive emotions like pleasure, joy and happiness. It's being satisfied with your life.</td></tr> <tr> <td><b>Engagement</b></td><td>ENGAGEMENT is taking part in activities and challenges that are motivating and absorbing. It is experiencing intense concentration, absorption and focus.</td></tr> <tr> <td><b>Relationships</b></td><td>RELATIONSHIPS means being connected with others. Having social contact, and social support.</td></tr> <tr> <td><b>Meaning</b></td><td>MEANING is having purpose in life and believing that life is worthwhile.</td></tr> <tr> <td><b>Accomplishment</b></td><td>ACCOMPLISHMENT involves working towards worthwhile achievements and valued goals.</td></tr> <tr> <td><b>+</b></td><td>'PLUS' refers to additional characteristics that are widely acknowledged are beneficial for wellbeing such as nutrition, physical activity and sleep.</td></tr> </tbody> </table> <p>BLACKWOOD HIGH SCHOOL THE UNIVERSITY OF ADELAIDE</p>	<b>Positive emotion</b>	POSITIVE EMOTION is feeling and experiencing positive emotions like pleasure, joy and happiness. It's being satisfied with your life.	<b>Engagement</b>	ENGAGEMENT is taking part in activities and challenges that are motivating and absorbing. It is experiencing intense concentration, absorption and focus.	<b>Relationships</b>	RELATIONSHIPS means being connected with others. Having social contact, and social support.	<b>Meaning</b>	MEANING is having purpose in life and believing that life is worthwhile.	<b>Accomplishment</b>	ACCOMPLISHMENT involves working towards worthwhile achievements and valued goals.	<b>+</b>	'PLUS' refers to additional characteristics that are widely acknowledged are beneficial for wellbeing such as nutrition, physical activity and sleep.	<p><b>Positive Psychology</b></p> <ul style="list-style-type: none"> <li>• It's nothing new!</li> </ul>  <p>BLACKWOOD HIGH SCHOOL THE UNIVERSITY OF ADELAIDE</p>
<b>Positive emotion</b>	POSITIVE EMOTION is feeling and experiencing positive emotions like pleasure, joy and happiness. It's being satisfied with your life.												
<b>Engagement</b>	ENGAGEMENT is taking part in activities and challenges that are motivating and absorbing. It is experiencing intense concentration, absorption and focus.												
<b>Relationships</b>	RELATIONSHIPS means being connected with others. Having social contact, and social support.												
<b>Meaning</b>	MEANING is having purpose in life and believing that life is worthwhile.												
<b>Accomplishment</b>	ACCOMPLISHMENT involves working towards worthwhile achievements and valued goals.												
<b>+</b>	'PLUS' refers to additional characteristics that are widely acknowledged are beneficial for wellbeing such as nutrition, physical activity and sleep.												
<p><b>What has already been happening at BHS?</b></p> <ul style="list-style-type: none"> <li>• 2014 &amp; 2015 measures</li> <li>• 2015 Participatory Action Group</li> <li>• David's take?</li> </ul>  <p>BLACKWOOD HIGH SCHOOL THE UNIVERSITY OF ADELAIDE</p>	<p><b>Wellbeing</b></p>  <p>BLACKWOOD HIGH SCHOOL THE UNIVERSITY OF ADELAIDE</p>												
<p><b>Ill-Being</b></p>  <p>BLACKWOOD HIGH SCHOOL THE UNIVERSITY OF ADELAIDE</p>	<p><b>Ill-Being by Gender 2015</b></p>  <p>BLACKWOOD HIGH SCHOOL THE UNIVERSITY OF ADELAIDE</p>												

<p>What has already been happening at BHS?</p> <ul style="list-style-type: none"> <li>• 2014 &amp; 2015 measures</li> <li>• 2015 Participatory Action Group</li> <li>• David's take?</li> </ul>  <div>   </div>	<p>What has already been happening at BHS?</p> <ul style="list-style-type: none"> <li>• 2014 &amp; 2015 measures</li> <li>• 2015 Participatory Action Group</li> <li>• David's take?</li> </ul>  <div>   </div>
<p>Rationale for PET</p> <ul style="list-style-type: none"> <li>• <b>Why us?</b> BHS is a pioneer in accessible, evidence based positive education.</li> <li>• <b>Why year 9?</b> Years 8 &amp; 9 show alarming depressive symptoms, slightly higher than the general population. It is pragmatically possible to conduct the PET in year 9.</li> <li>• <b>Why this content?</b> Both the reduction of negative factors, and the addition of positive factors are needed (Waters, 2011)</li> </ul> <div>   </div>	<p>Positive Education Practices (PEPs)</p> <ul style="list-style-type: none"> <li>• PEPs are relatively simple intentional activities.</li> <li>• There is evidence they 'work'.</li> <li>• PEPs can; <ul style="list-style-type: none"> <li>- take place in the classroom (explicit teaching)</li> <li>- be incorporated into lessons, sports coaching or everyday interactions (embedded strategies)</li> <li>- be school wide practices.</li> </ul> </li> </ul> <div>   </div>
<p>Positive Education Practices (PEPs)</p> <ol style="list-style-type: none"> <li>1. Three Good Things</li> <li>2. Gratitude Letter</li> <li>3. Meaning Through Photography</li> <li>4. Counting Kindness</li> <li>5. Best Possible Selves</li> </ol> <div>   </div>	<p>MoodGYM</p> <ol style="list-style-type: none"> <li>1. Sign up, 'Getting started' &amp; Feelings module</li> <li>2. Thoughts module</li> <li>3. Unwarping module</li> <li>4. De-stressing module</li> <li>5. Relationships module &amp; 'Wrapping it up'</li> </ol>  <div>   </div>
<p>Session 2</p> <ul style="list-style-type: none"> <li>• MoodGYM</li> <li>• Broaden &amp; Build Theory</li> <li>• Workshop proposed PEPs → lesson plans</li> </ul> <div>   </div>	<p>Questions?</p>  <div>   </div>
<p>References</p> <ul style="list-style-type: none"> <li>• Bolger, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., &amp; Bohlmeijer, E. (2013). Positive psychology interventions: a meta-analysis of randomized controlled studies. <i>BMC Public Health</i>, 13(1), 119.</li> <li>• Christensen, H., Callar, A., Tait, R., Gooling, J., Griffiths, K., &amp; Murray, K. (2011). <i>School based intervention programs and shared care collaborative models targeting the prevention of or early intervention in child and adolescent mental health problems: An Evidence Check review brokered by the Sax Institute for the NSW Ministry of Health October 2011.</i></li> <li>• Lyubomirsky, S., &amp; Layous, K. (2013). How do simple positive activities increase well-being? <i>Current Directions in Psychological Science</i>, 22(1), 57-62.</li> <li>• Nehmy, T. J., &amp; Wade, T. D. (2014). Reduction in the prospective incidence of adolescent psychopathology: A review of school-based prevention approaches. <i>Mental Health &amp; Prevention</i>.</li> <li>• Sin, N. L., &amp; Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. <i>Journal of Clinical Psychology</i>, 65(5), 467-487.</li> <li>• Waters, L. (2011). A review of school-based positive psychology interventions. <i>The Australian Educational and Developmental Psychologist</i>, 28(02), 75-90.</li> </ul> <div>   </div>	

## Training Session 2

<h3>Session 2</h3> <ul style="list-style-type: none"> <li>• Positive Emotions</li> <li>• Collaboration;             <ul style="list-style-type: none"> <li>- Class Norms</li> <li>- Adverse events</li> <li>- PET session plans</li> </ul> </li> <li>• Gratitude letter</li> </ul> <div>   </div>	<h3>Emotions impact;</h3> <ul style="list-style-type: none"> <li>• Our cognition</li> <li>• Our attention</li> <li>• Our evaluations of the world</li> <li>• Our values</li> <li>• Our judgements</li> <li>• Our identity</li> <li>• Our relationships</li> </ul> <div>   </div>
<h3>Broaden &amp; Build Theory</h3> <p>Experiences of positive emotions <i>broaden</i> people's in the moment thinking &amp; behaviour, → which in turn serves to <i>build</i> their enduring personal resources (physical, intellectual, social and psychological resources)</p>  <p><small>Meguer-Mheu, L. L. (2006). Therapist's guide to positive psychological interventions: Academic Press.</small></p> <div>   </div>	<h3>Positive Emotions</h3> <ul style="list-style-type: none"> <li>• Joy</li> <li>• Gratitude</li> <li>• Serenity</li> <li>• Interest</li> <li>• Hope</li> <li>• Pride</li> <li>• Amusement</li> <li>• Inspiration</li> <li>• Awe</li> <li>• Love</li> </ul> <p><b>3:1</b></p>  <div>   </div>
 <div>   </div>	<h3>Positive Education Trial (PET)</h3> <ul style="list-style-type: none"> <li>• Class Norms <i>Do we need to explicitly state class norms? If so, what should they be?</i></li> <li>• Adverse events protocol <i>What adverse events could happen in the PET?</i></li> </ul> <p>Handout</p> <div>   </div>
<h3>PET Session Plans</h3>  <div>   </div>	<h3>Gratitude letter</h3>  <div>   </div>
<h3>Session 3</h3> <ul style="list-style-type: none"> <li>• MoodGYM</li> <li>• E, R, M, A &amp; '+'</li> <li>• Additional positive education concepts</li> <li>• Boosters</li> </ul> <div>   </div>	<h3>Questions?</h3>  <div>   </div>

## References

- <http://www.scientificamerican.com/article/negative-emotions-key-well-being/>
- Danner, D. D., Snowdon, D. A., & Friesen, W. V. (2001). Positive emotions in early life and longevity: findings from the nun study. *Journal of Personality and Social Psychology*, 80(5), 804.
- Fredrickson, B. L. (1998). What good are positive emotions? *Review of general psychology*, 2(3), 300.
- Magyar-Moe, J. L. (2009). *Therapist's guide to positive psychological interventions*: Academic Press.
- 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.



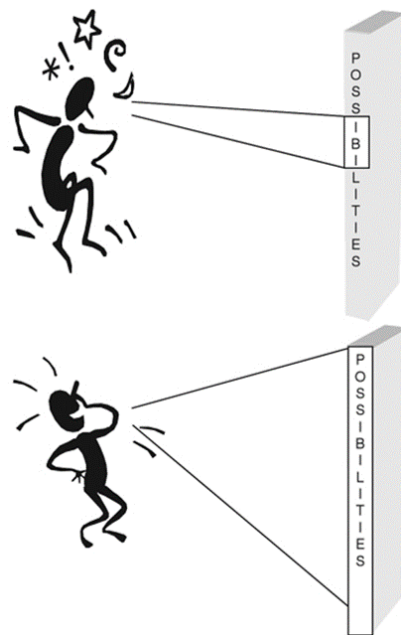
## Postive emotions handout

### Broaden & Build Theory (Fredrickson, 1998)

This is a central theory of positive psychology which helps to explain how and why positive emotion is so beneficial to the human experience. The theory states; *experiences of positive emotions broaden people's momentary thought-action repertoires which in turn serves to build their enduring personal resources.*

Put another way;

Experiences of positive emotions *broaden* a person's in-the-moment thinking and behaviour, → which in turn serves to *build* their enduring physical, intellectual, social and psychological resources for long term adaptation.



Magyar-Moe, J. L. (2009). *Therapist's guide to positive psychological interventions*: Academic Press.

Responses to negative emotions such as fight, flight or freeze have immediate survivor value, but responses to positive emotions appear to expand peoples' thoughts, actions and attention and cultivate their personal resources which are beneficial to survival in the longer term.

For example;

- joy sparks the urge to play,
- interest sparks the urge to explore,

- contentment sparks the urge to savour.

Take the positive emotions involved with child's play for example.

- Joy (a positive emotion) sparks the urge to play.
  - A child's joyful play will build her muscle strength and coordination – building enduring physical resources.
  - Play can also build enduring social resources – sharing amusement and smiles with another child builds social bonds and attachments.
  - Childhood play increases creativity and fuels brain development – building enduring intellectual resources.



This is how experiencing positive emotions can increase one's personal resources. It's these resources that can be drawn on in difficult times.

- The benefit of negative emotions

We should acknowledge that not all negative emotions are bad. The scholars of positive psychology are keen to emphasise that it's not compulsory positivity.

1. Blocking negative emotions can lead to a block of all emotions.

Substance abuse is a harmful attempt to block all emotions. Working through negative emotions with mindfulness is now seen as one of the ways to effectively deal with them.

2. Some negative emotions *do* have utility – not *just* for immediate survival.

Think of the fear of failure/shame that motivates someone to prepare for a test. Think about anger that can lead to action for a worthy cause. Think about regret that may lead to a helpful behaviour change.

Negative emotions, when extreme, prolonged or contextually inappropriate are harmful. But positive emotions can also cause problems like mania and addiction. It's not pleasant to feel frustrated, sad, anxious, and so on, but that doesn't mean that these negative emotions are altogether or intrinsically bad.






## References

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology*, 2(3), 300.

Magyar-Moe, J. L. (2009). *Therapist's guide to positive psychological interventions*: Academic Press.

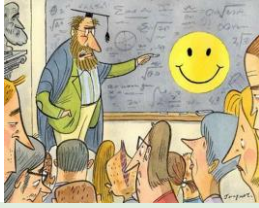


## Training Session 3

 <p><b>Positive Education: an introduction</b></p> <p>Session 3</p>	<p><b>Session 3</b></p> <ul style="list-style-type: none"> <li>BHS mental health</li> <li>PET session plans (cont.)</li> <li>MoodGYM</li> </ul>
<p><b>BHS Mental Health</b></p> <p><u>Depression - 2014</u></p> <ul style="list-style-type: none"> <li>40.21% of students <math>\geq</math> mild symptomatology</li> <li>9.97% of students are in severe or extremely severe category.</li> </ul> <p><u>Depression - 2015</u></p> <ul style="list-style-type: none"> <li>48.62% of students <math>\geq</math> mild symptomatology</li> <li>14.54% severe or extremely severe</li> </ul>	<p>Figure 3: Leading underlying causes of death in Australia by age group, 2011-2013</p>  <p>Australian Government Australian Institute of Health and Welfare</p>
<ul style="list-style-type: none"> <li>Session 1. Introduction and Three Good Things</li> <li>Session 2. Gratitude Letter, Meaning through Photography instructions</li> <li>Session 3. Revisit Meaning through Photography, Counting Kindness instructions</li> <li>Session 4. MoodGYM: Sign up, 'Getting started' &amp; Feelings module</li> <li>Session 5. MoodGYM: Thoughts module</li> <li>Session 6. MoodGYM: Unwarping module</li> <li>Session 7. MoodGYM: De-stressing module</li> <li>Session 8. MoodGYM: Relationships module &amp; 'Wrapping it up'</li> <li>Session 9. Revisit Counting Kindness, Best possible selves</li> </ul>	<p><b>PET Session Plans (cont.)</b></p> 
<p><b>MoodGYM</b></p> <p><i>"...there is nothing either good or bad, but thinking makes it so."</i></p> <p>Hamlet Act 2, scene 2, 239-251</p> 	<p><b>WUTIWUF</b></p> <p><i>What you think is what you feel.</i></p>  
<p><b>Warped thoughts</b></p> 	<p><b>Evaluation</b></p>



## Questions?



BLACKWOOD  
HIGH SCHOOL

THE UNIVERSITY  
of ADELAIDE

## References

- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 92(6), 1087.
- Duckworth, A. L., & Seligman, M. E. (2005). Self-discipline Outdoes IQ in Predicting Academic Performance of Adolescents. *Psychological Science*, 16(12), 939-944.
- Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York, NY: Random House.
- <http://mindsetonline.com>
- Kern, M. L., Benson, L., Steinberg, E. A., & Steinberg, L. (2015). The EPOCH measure of adolescent well-being. *Psychological Assessment*.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68.
- Nakamura, J., & Csikszentmihalyi, M. (2002). The Concept of Flow. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of Positive Psychology* (pp. 89-105). Oxford University Press.

BLACKWOOD  
HIGH SCHOOL

THE UNIVERSITY  
of ADELAIDE

## APPENDIX 9

### Whole school questionnaire



## Measures of Blackwood High School

This questionnaire will help Blackwood High School understand the things that help you do well, feel good and enjoy your life. It will only take approximately 15 – 25 minutes to complete. Please be honest; it is private and there are no wrong answers. And thanks for doing it.

We need to tell you:

- We treat your information with absolute confidentiality - individuals will not be identified, data will only be examined on an aggregate basis. Data may be linked to other outcome data held by the school without re-identification.
- You can withdraw at any time, but your participation and honest answers will help your school to better teach you. If you decide not to do it, your teacher will give you another activity to complete.

If you experience any emotional distress from answering the questions, you can speak to one of the school's Student Counsellors, your Care Group teacher, your Year Level Leader or you can contact The Kids Helpline on 1800 55 1800 or at [www.kidshelp.com.au](http://www.kidshelp.com.au)

Consent  
page

By checking the button below, I agree that;

- I have read the above information
- I voluntarily agree to participate
- I understand I am free to withdraw at any time without penalty
- I am at least 13 years of age today



AGREE

Next

Part 1 of 5: This is a just a bit of background information about you.

STUDENT ID\* .....

AGE TODAY\* .....

CARE GROUP .....

GENDER IDENTITY\*

Male

Female

Gender  
diverse<sup>✧</sup>

DO YOU SPEAK A LANGUAGE OTHER THAN ENGLISH AT HOME?\*

Yes

No

✧Here *gender diverse* includes (but is not limited to) transsexual, intersex, gender fluid, androgynous, non-binary, and 'unsure'.

**Part 2 of 5: This part is about your general health.**  
Pay careful attention to the time span that each question is asking you about.

The following questions are about your sleep.

1. Figure out how long you usually sleep for on a normal 'school night' (i.e Sun, Mon, Tue, Wed, Thu) and fill it in here. [Do not include the time you spend in bed awake.]

\_\_\_\_\_ hours\*                      and \_\_\_\_\_ minutes\*

2. Now think about how long you usually sleep for on a weekend night (i.e. Fri, Sat) and fill it in here. [Do not include the time you spend in bed awake.]

\_\_\_\_\_ hours\*                      and \_\_\_\_\_ minutes\*

3. During a usual week, I fall asleep during my morning classes. \*

Never (0 times per month)..... ?  
Rarely (less than 3 times per month)..... ?  
Sometimes (1-2 times per week) ..... ?  
Often (3-4 times per week) ..... ?  
Almost every day (5 or more times per week) ..... ?

4. During a usual week, I go through the whole school day without feeling tired.\*

Never (0 times per month)..... ?  
Rarely (less than 3 times per month)..... ?  
Sometimes (1-2 times per week) ..... ?  
Often (3-4 times per week) ..... ?  
Almost every day (5 or more times per week) ..... ?

5. During a usual week, I fall asleep during the last class of the day.\*

Never (0 times per month)..... ?  
Rarely (less than 3 times per month)..... ?  
Sometimes (1-2 times per week) ..... ?  
Often (3-4 times per week) ..... ?  
Almost every day (5 or more times per week) ..... ?

6. During a usual week, I feel drowsy if I ride in a car for longer than five minutes.\*

Never (0 times per month)..... ?

Rarely (less than 3 times per month)..... ?

Sometimes (1-2 times per week) ..... ?

Often (3-4 times per week) ..... ?

Almost every day (5 or more times per week) ..... ?

7. During a usual week, I feel wide-awake the whole day.\*

Never (0 times per month)..... ?

Rarely (less than 3 times per month)..... ?

Sometimes (1-2 times per week) ..... ?

Often (3-4 times per week) ..... ?

Almost every day (5 or more times per week) ..... ?

8. During a usual week, I fall asleep at school in the afternoons.\*

Never (0 times per month)..... ?

Rarely (less than 3 times per month)..... ?

Sometimes (1-2 times per week) ..... ?

Often (3-4 times per week) ..... ?

Almost every day (5 or more times per week) ..... ?

9. During a usual week I feel alert during my classes.\*

Never (0 times per month)..... ?

Rarely (less than 3 times per month)..... ?

Sometimes (1-2 times per week) ..... ?

Often (3-4 times per week) ..... ?

Almost every day (5 or more times per week) ..... ?

10. During a usual week, I feel sleepy in the evening after school.\*

Never (0 times per month)..... ?

Rarely (less than 3 times per month)..... ?

Sometimes (1-2 times per week) ..... ?

Often (3-4 times per week) ..... ?

Almost every day (5 or more times per week) ..... ?

11. During a usual week, I feel sleepy when I ride in a bus to a school event like an excursion or sports game.\*

Never (0 times per month)..... ?

Rarely (less than 3 times per month)..... ?

Sometimes (1-2 times per week) ..... ?

Often (3-4 times per week) ..... ?

Almost every day (5 or more times per week) ..... ?

12. During a usual week, in the morning when I am in school, I fall asleep.\*

Never (0 times per month)..... ?

Rarely (less than 3 times per month)..... ?  
 Sometimes (1-2 times per week) ..... ?  
 Often (3-4 times per week) ..... ?  
 Almost every day (5 or more times per week) ..... ?

13. During a usual week, when I am in class, I feel wide-awake.\*

Never (0 times per month)..... ?  
 Rarely (less than 3 times per month)..... ?  
 Sometimes (1-2 times per week) ..... ?  
 Often (3-4 times per week) ..... ?  
 Almost every day (5 or more times per week) ..... ?

14. During a usual week, I feel sleepy when I do my homework in the evening after school.\*

Never (0 times per month)..... ?  
 Rarely (less than 3 times per month)..... ?  
 Sometimes (1-2 times per week) ..... ?  
 Often (3-4 times per week) ..... ?  
 Almost every day (5 or more times per week) ..... ?

15. During a usual week, I feel wide-awake the last class of the day.\*

Never (0 times per month)..... ?  
 Rarely (less than 3 times per month)..... ?  
 Sometimes (1-2 times per week) ..... ?  
 Often (3-4 times per week) ..... ?  
 Almost every day (5 or more times per week) ..... ?

16. During a usual week, I fall asleep when I ride in a bus, car, or train.\*

Never (0 times per month)..... ?  
 Rarely (less than 3 times per month)..... ?  
 Sometimes (1-2 times per week) ..... ?  
 Often (3-4 times per week) ..... ?  
 Almost every day (5 or more times per week) ..... ?

17. In a usual week, during the school day there are times when I realize that I have just fallen asleep.\*

Never (0 times per month)..... ?  
 Rarely (less than 3 times per month)..... ?  
 Sometimes (1-2 times per week) ..... ?  
 Often (3-4 times per week) ..... ?  
 Almost every day (5 or more times per week) ..... ?

18. During a usual week, I fall asleep when I do schoolwork at home in the evening.\*

Never (0 times per month)..... ?  
 Rarely (less than 3 times per month)..... ?  
 Sometimes (1-2 times per week) ..... ?

Often (3-4 times per week) ..... ?  
 Almost every day (5 or more times per week) ..... ?

This next part is about your level of physical activity *in the last 7 days*. Physical activity is not only sport, it is defined as “any bodily movement produced by skeletal muscles that requires energy expenditure”. Of course this includes sports, but also games or other activities that make you move around, breathe hard, sweat or make your body feel tired. Remember that there are no right and wrong answers — this is not a test.

19. Physical activity in your spare time: Have you done any of the following activities in the *last 7 days (last week)*? If yes, how many times? (Mark only one option per row.)\*

	None	1-2	3-4	5-6	7 times or more
Football / Rugby	..... ?	..... ?	..... ?	..... ?	..... ?
Netball	..... ?	..... ?	..... ?	..... ?	..... ?
Tennis	..... ?	..... ?	..... ?	..... ?	..... ?
Swimming	..... ?	..... ?	..... ?	..... ?	..... ?
Cricket	..... ?	..... ?	..... ?	..... ?	..... ?
Soccer	..... ?	..... ?	..... ?	..... ?	..... ?
Basketball	..... ?	..... ?	..... ?	..... ?	..... ?
Athletics	..... ?	..... ?	..... ?	..... ?	..... ?
Baseball, softball	..... ?	..... ?	..... ?	..... ?	..... ?
Rowing/canoeing	..... ?	..... ?	..... ?	..... ?	..... ?
Skateboarding	..... ?	..... ?	..... ?	..... ?	..... ?
In-line skating	..... ?	..... ?	..... ?	..... ?	..... ?
Kicking the footy / playing catch	..... ?	..... ?	..... ?	..... ?	..... ?
Tag or similar	..... ?	..... ?	..... ?	..... ?	..... ?
Walking for exercise / transport	..... ?	..... ?	..... ?	..... ?	..... ?
Bicycling for exercise / transport	..... ?	..... ?	..... ?	..... ?	..... ?
Aerobics /weights or resistance training	..... ?	..... ?	..... ?	..... ?	..... ?
Jogging or running	..... ?	..... ?	..... ?	..... ?	..... ?
Dance	..... ?	..... ?	..... ?	..... ?	..... ?
Volleyball	..... ?	..... ?	..... ?	..... ?	..... ?
Table tennis	..... ?	..... ?	..... ?	..... ?	..... ?
Other:					
.....	..... ?	..... ?	..... ?	..... ?	..... ?
.....	..... ?	..... ?	..... ?	..... ?	..... ?

20. In *the last 7 days*, during your *physical education (PE) classes*, how often were you very active (playing hard, running, jumping, throwing)? (Check one only.)\*

I don't do PE ..... ?  
 Hardly ever ..... ?

Sometimes ..... ☐  
Quite often ..... ☐  
Always ..... ☐

21. In the last 7 days, what did you normally do at lunch (besides eating lunch)? (Check one only.)\*

Sat down (talking, reading, doing schoolwork).....☐  
Stood around or walked around ..... ☐  
Ran or played a little bit ..... ☐  
Ran around and played quite a bit ..... ☐  
Ran and played hard most of the time ..... ☐

22. In the last 7 days, on how many days right after school, did you do sports, dance, or play games in which you were very active? (Check one only.)\*

None .....☐  
1 time last week ..... ☐  
2 or 3 times last week ..... ☐  
4 times last week ..... ☐  
5 times last week ..... ☐

23. In the last 7 days, on how many evenings did you do sports, dance, or play games in which you were very active? (Check one only.)\*

None ..... ☐  
1 time last week ..... ☐  
2 or 3 times last week ..... ☐  
4 or 5 last week ..... ☐  
6 or 7 times last week ..... ☐

24. Last weekend, how many times did you do sports, dance, or play games in which you were very active? (Check one only.)\*

None ..... ☐  
1 time ..... ☐  
2 — 3 times ..... ☐  
4 — 5 times ..... ☐  
6 or more times ..... ☐

25. Which one of the following describes you best for the last 7 days? Read all five statements before deciding on the one answer that describes you in the last week.\*

All or most of my free time was spent doing things that involve *little physical effort*  
.....☐

I *sometimes* (1 — 2 times last week) did physical things in my free time (e.g. played sports, went running, swimming, bike riding, did aerobics)  
.....☐



I *often* (3 — 4 times last week) did physical things in my free time .....

?

I *quite often* (5 — 6 times last week) did physical things in my free time

.....?

I *very often* (7 or more times last week) did physical things in my free time

.....?

26. Mark how often you did physical activity (like playing sports, games, doing dance, or any other physical activity) for each day last week.\*

	None	Little bit	Moderately	Often	Very often
Monday	?.....?	?.....?	?.....?	?.....?	?
Tuesday	?.....?	?.....?	?.....?	?.....?	?
Wednesday	?.....?	?.....?	?.....?	?.....?	?
Thursday	?.....?	?.....?	?.....?	?.....?	?
Friday	?.....?	?.....?	?.....?	?.....?	?
Saturday	?.....?	?.....?	?.....?	?.....?	?
Sunday	?.....?	?.....?	?.....?	?.....?	?

27. Were you sick last week, or did anything prevent you from doing your normal physical activities? (Check one.)\*

Yes .....?

No .....?

28. If Yes, what prevented you? .....

Think about your physical activities described above in the previous questions, however much or however little you do, in both summer and winter. Remember to think of what you do in school time, any activities after school, on the weekends and how you get to school if you walk or bike some of the way.

29. We need your best guess of the time you spend doing physical activity in a typical week.

..... minutes per week

Part 3 of 5: Great, you're going well! This part is about how good you feel in general.

Please read each of the following statements and indicate how much each statement describes you.

30. When something good happens to me, I have people who I like to share the good news with.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

31. I finish whatever I begin.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

32. I am optimistic about my future.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

33. I feel happy.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

34. When I do an activity, I enjoy it so much that I lose track of time.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

35. I have a lot of fun.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

36. I get completely absorbed in what I am doing.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

37. I love life.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

38. I keep at my schoolwork until I am done with it.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

39. When I have a problem, I have someone who will be there for me.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

40. I get so involved in activities that I forget about everything else.\*

Almost never	Sometime s	Often	Very Often	Almost Always
-----------------	---------------	-------	---------------	------------------

41. When I am learning something new, I lose track of how much time has passed.\*

Not at all like me	A little like me	Somewha t like me	Mostly like me	Very much like
-----------------------	---------------------	----------------------	-------------------	-------------------

42. In uncertain times, I expect the best.\*

Not at all like me	A little like me	Somewha t like me	Mostly like me	Very much like
-----------------------	---------------------	----------------------	-------------------	-------------------

43. There are people in my life who really care about me.\*

Not at all like me	A little like me	Somewha t like me	Mostly like me	Very much like
-----------------------	---------------------	----------------------	-------------------	-------------------

44. I think good things are going to happen to me.\*

Not at all like me	A little like me	Somewha t like me	Mostly like me	Very much like
-----------------------	---------------------	----------------------	-------------------	-------------------

45. I have friends that I really care about.\*

Not at all like me	A little like me	Somewha t like me	Mostly like me	Very much like
-----------------------	---------------------	----------------------	-------------------	-------------------

46. Once I make a plan to get something done, I stick to it.\*

Not at all like me	A little like me	Somewha t like me	Mostly like me	Very much like
-----------------------	---------------------	----------------------	-------------------	-------------------

47. I believe that things will work out, no matter how difficult they seem.\*

Not at all like me	A little like me	Somewha t like me	Mostly like me	Very much like
-----------------------	---------------------	----------------------	-------------------	-------------------

48. I am a hard worker.\*

Not at all like me	A little like me	Somewha t like me	Mostly like me	Very much like
-----------------------	---------------------	----------------------	-------------------	-------------------

49. I am a cheerful person.\*

Not at all like me	A little like me	Somewha t like me	Mostly like me	Very much like
-----------------------	---------------------	----------------------	-------------------	-------------------

## Part 4 of 5: You've done most of it now, keep it up!

These questions are about how you have been feeling in the past week. Please indicate the choice which best describes how you have felt *in the last 7 days*.

- There are no right or wrong answers. Do not spend too much time on any statement.

0 NEVER  
Did not apply to  
me at all

1 SOMETIMES  
Applied to me to  
some degree, or  
some of the time

2 OFTEN  
Applied to me to a  
considerable degree, or  
a good part of time

3 ALMOST ALWAYS  
Applied to me very  
much, or most of the  
time

	Never	Sometimes	Often	Almost always
50. I found it hard to wind down.*	0	1	2	3
51. I was aware of dryness of my mouth.*	0	1	2	3
52. I couldn't seem to experience any positive feeling at all.*	0	1	2	3
53. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion).*		0	1	2
3				
54. I found it difficult to work up the initiative to do things.*	0	1	2	3
55. I tended to over-react to situations.*	0	1	2	3
56. I experienced trembling (eg, in the hands).*	0	1	2	3
57. I felt that I was using a lot of nervous energy.*	0	1	2	3
58. I was worried about situations in which I might panic and make a fool of myself.*				
	0	1	2	3
59. I felt that I had nothing to look forward to.*	0	1	2	3
60. I found myself getting agitated.*	0	1	2	3
61. I found it difficult to relax.*	0	1	2	3
62. I felt down-hearted and blue.*	0	1	2	3
63. I was intolerant of anything that kept me from getting on with what I was doing.*				
	0	1	2	3
64. I felt I was close to panic.*	0	1	2	3
65. I was unable to become enthusiastic about anything.*	0	1	2	3
66. I felt I wasn't worth much as a person.*	0	1	2	3
67. I felt that I was rather touchy.*	0	1	2	3
68. I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat).*				
	0	1	2	3
69. I felt scared without any good reason.*	0	1	2	3
70. I felt that life was meaningless.*	0	1	2	3

Part 5 of 5 – Good work! You’re almost done.

Please indicate how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

	not true at all	rarely true	sometimes true	often true	true nearly all the time
71. I am able to adapt when changes occur.*	0	1	2	3	4
72. I can deal with whatever comes my way.*	0	1	2	3	4
73. I try to see the humorous side of things when I am faced with problems.*	0	1	2	3	4
74. Having to cope with stress can make me stronger.*	0	1	2	3	4
75. I tend to bounce back after illness, injury, or other hardships.*	0	1	2	3	4
76. I believe I can achieve my goals, even if there are obstacles.*	0	1	2	3	4
77. Under pressure, I stay focused and think clearly.*	0	1	2	3	4
78. I am not easily discouraged by failure.*	0	1	2	3	4
79. I think of myself as a strong person when dealing with life’s challenges and difficulties.*	0	1	2	3	4
80. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.*	0	1	2	3	4

You’re done! Thanks so much 😊

All rights reserved. No part of this document may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopying, or by any information storage or retrieval system, without permission in writing from Dr. Davidson at [mail@cd-risc.com](mailto:mail@cd-risc.com). Further information about the scale and terms of use can be found at [www.cd-risc.com](http://www.cd-risc.com). Copyright © 2001, 2013, 2015 by Kathryn M. Connor, M.D., and Jonathan R.T. Davidson, M.D.

## APPENDIX 10

### Appendix of paper 2

#### *Exploration of Implementation Factors.*

Factor	Investigation setting	Item
<b>Intervention factors</b>		
Compatibility with recipients (appropriateness, fit, congruence, match)	Teacher discussion	How appropriate was the positive education content? Specifically for the year 9 age group?
	Student evaluative questions	I enjoyed doing this trial of positive education
Fit with the organization's mission, priorities, policies and values	Deputy principal interview	How does positive education, and more specifically the content that was contained in the trial, fit with the values of Blackwood High School?
Adaptability vs. fidelity, including standardised teaching materials	Deputy principal interview	How well did you think the positive psychology interventions were adapted to the school setting at Blackwood High?
	Teacher discussion	How closely were you able to deliver the PET as intended? Were there any changes/adaptations you made 'on the run'?  Did all classes reach the same point in the content by the last PET session?  Were there any privacy issues with doing activities involving the whole class? If so, how were they handled?
Dosage effects: Time & Timing	Teacher discussion	Was there anything specific that you think would improve the activities used in the PET? Such as the timing of the activities – more or less frequent etc.
	Student focus group	Was Extended Care Group the best time in which to do Positive Education?

		Would you have liked to spend more time on each exercise? Or would you have liked to do positive education more frequently than once a week?
Clear outcome measures	Online data collection	Positive and negative mental health (EPOCH, CD-RISC, DASS-21 – see 2.3.3)
<b>Recipient factors</b>		
Feelings values attitudes of recipients about the intervention, perceived need for the intervention	Student evaluative questions	There is a need for positive education at Blackwood High School.
	Student focus group	Do you think there is a need for something like this (a program to help your wellbeing and develop thinking skills) at the school?
Buy-in – the extent to which the recipient believes the intervention is worthwhile	Student evaluative questions	Positive education seems like a worthwhile thing to do.
	Student focus group	How well was the positive education you did in care group this year accepted by you and your peers?
Self-efficacy – extent to which recipient feels the intervention is able to bring about change	Student evaluative questions	After doing some positive education this year, I have a better knowledge and understanding of my own thoughts and wellbeing.
		Some skills I learned in positive education have helped me to become a more capable student.
Motivation to participate in the intervention	Student evaluative questions	I felt motivated to participate in the positive education sessions.
Benefits – knowing the beneficial outcomes of the intervention	Student focus group	How many of you know the possible benefits of positive education? How important was it to know this?
Collaboration – the extent to which recipients contributions are sought and valued	Student evaluative questions	It was good that some BHS students were involved in planning and explaining positive education.
<b>Provider factors</b>		



Perceived need for/relevance of, and benefit/effectiveness of intervention	Teacher pre-PEPP questionnaire	I understand the rationale behind positive education.  There is a need for positive education at Blackwood High School.
Training of practitioners	Teacher post-PEPP questionnaire	In retrospect, I would have liked to do additional specific positive education training before teaching it to my students
Motivation to implement the intervention	Teacher pre-PEPP questionnaire	I will be able to motivate my students to participate in positive education.
Self-efficacy – extent to which provider feels they are able to do what is required and their beliefs about the program’s potential to bring about change	Teacher pre-PEPP questionnaire	I am convinced that I am able to successfully teach positive education content to even the most difficult students.
Practitioner skill and experience  (openness to change/new practices, perceived divergence of research based intervention with usual teaching practices)	Teacher pre-PEPP questionnaire	Years of teaching experience [open-ended]  I will be able to teach positive education even when I am opposed by sceptical colleagues.
Practitioner’s understanding of the theory underlying intervention, how and why it should be implemented	Teacher pre-PEPP questionnaire	I understand the rationale behind positive education.
The intervention’s intuitive appeal to the provider	Teacher pre-PEPP questionnaire	I believe positive education will help the psychological health of my students.
Level of support/resources	Teacher discussion	How satisfied were you with the level of support you received from the teaching materials/resources and the school in implementing the PET?

---

#### Organisational factors

Vision, efficacy and buy-in of staff, work climate, norms regarding change	Deputy principal interview	How well did the year 9 teachers 'buy-in' to the positive education trial?
Personnel stability	Deputy principal interview	Were there any changes in personnel during the trial?
Organizational readiness for evidence-based programs (values, resources, skills & ongoing evaluation)	Deputy principal interview  Analysis of BHS Strategic Directions 2013-2018 (Blackwood High School, 2012)	In retrospect, was the school ready for this step in the implementation of positive education? Regarding skills, resources etc.
Shared decision making, collaboration, input of stakeholders	Student evaluative questions  Teacher post-PEPP questionnaire  Analysis of DECD Strategic Plan 2014-2018 (Department for Education and Child Development, 2013)	It was good that some BHS students were involved in planning and explaining positive education.  I am satisfied with the level of input I had in the positive education trial.
Communication & ongoing support – the extent to which frequent and open communication and problem solving is encouraged once implementation begins, and mechanisms allowing it	Teacher discussion  Deputy principal interview	Was there open communication with the school? With each other?  Was there an open communication channel between the school (you, Lee, Janet) and the year 9 teachers? Among the year 9 teachers?
Specific staffing considerations – leadership and administrative support	Deputy principal interview	Was there adequate leadership and administration support?

Incentive and reward – for both recipient and provider	Deputy principal interview	In retrospect, was there adequate incentive and reward for the students? The teachers?
Level of resources	Deputy principal interview	After this process, what are your thoughts on the level of resources?
<b>Contextual factors</b>		
Political support or lack thereof	Deputy principal interview  Analysis of DECD Strategic Plan 2014-2018 (Department for Education and Child Development, 2013)	How supported is the organisation to implement positive education? By the school board? The DECD?
Parental and community member engagement	Parental questionnaire	<p>Were you aware of the positive education trial your child participated in this year? [Y/N]</p> <p>How did you interact with your child regarding positive education? [5-point Likert scale]</p> <p>How did positive education impact on your child? [5-point Likert scale]</p> <p>How satisfied were you with the school's trial of positive education with year 9 students? [5-point Likert scale]</p> <p>How important is it that the school engages in some social and emotional learning such as positive education? [5-point Likert scale]</p>

*Note.* Except where stated, all student evaluative questions and teacher pre-PEPP items were answered on a 5-point agree-disagree Likert scale. DECD=Department of Education and Child Development.

## APPENDIX 11

### Appendices (A-E) of paper 3

#### Appendix A

Table A1

*Reliability data for all variables in all years (Cronbach's alpha).*

		2014	2015	2016	2017
PAQ-A	Physical Activity	.84	.85	.84	.85
	Engagement	.84	.82	.86	.84
	Perseverance	.82	.80	.82	.84
EPOCH	Optimism	.87	.84	.82	.86
	Connectedness	.80	.78	.84	.85
	Happiness	.90	.87	.90	.91
CD-RISC	Resilience	-	-	.89	.93
	Depression	.90	.91	.86	.91
DASS-21	Anxiety	.78	.85	.81	.84
	Stress	.84	.86	.84	.85

*Note.* PAQ-A = physical activity, EPOCH = Engagement, Perseverance, Optimism, Connectedness, Happiness. CD-RISC = Resilience. DASS-21 = Depression, Anxiety, Stress. Resilience was not measured in 2014 or 2015.

## Appendix B

Table B1

### Gender Differences in Physical Activity and Mental Health in 2014.

	Gender	Mean	N	SD	Mean difference	t	df	sig.	Bootstrapped 95% CI	Effect size (Cohen's d)	CI around Effect size
Physical Activity	Males	2.72	201	.84	.27	3.46	379.011	.001	.12, .42	.35	.15, .55
	Females	2.45	188	.68							
Engagement	Males	3.14	197	.91	.28	3.10	381	.002	.11, .46	.31	.11, .51
	Females	2.86	186	.89							
Perseverance	Males	3.21	197	.85	.12	1.44	381	.152	-.04, .30	.14	-.06, .34
	Females	3.09	186	.85							
Optimism	Males	3.26	197	.90	.27	2.78	381	.006	.08, .47	.29	.09, .49
	Females	2.99	186	.98							
Connectedness	Males	3.74	197	.88	-.16	-1.77	381	.078	-.33, .01	-.18	-.38, .02
	Females	3.90	186	.89							
Happiness	Males	3.59	197	.99	.26	2.59	381	.010	.06, .46	.26	.06, .46
	Females	3.33	186	1.00							
Depression	Males	3.25	209	3.86	-2.08	-4.66	360.73	.000	-2.97, -1.16	-.47	-.67, -.27
	Females	5.33	192	4.95							
Anxiety	Males	3.26	209	3.02	-1.91	-5.29	349.52	.000	-2.67, -1.17	-.53	-.73, -.33
	Females	5.17	192	4.09							
Stress	Males	4.29	209	3.66	-1.78	-4.54	399	.000	-2.56, -.97	-.45	-.65, -.25
	Females	6.06	192	4.18							

Table B2

*Gender Differences in Physical Activity and Mental Health in 2015.*

	Gender	Mean	N	SD	Mean difference	t	df	sig.	Bootstrapped 95% CI	Effect size (Cohen's d)	CI around Effect size
Physical Activity	Males	2.62	210	.86	.26	3.38	403.71	.001	.12, .41	.32	.13, .52
	Females	2.37	207	.71							
Engagement	Males	3.02	217	.84	.03	.40	435	.693	-.12, .18	.04	-.15, .22
	Females	2.99	220	.80							
Perseverance	Males	3.24	217	.82	-.10	-1.37	435	.170	-.25, .04	-.13	-.31, .06
	Females	3.34	220	.77							
Optimism	Males	3.34	217	.84	.11	1.30	435	.195	-.04, .26	.12	-.07, .30
	Females	3.24	220	.88							
Connectedness	Males	3.94	217	.79	-.17	-2.24	435	.020	-.32, -.03	-.21	-.40, -.03
	Females	4.11	220	.80							
Happiness	Males	3.70	217	.86	.20	2.40	435	.017	.04, .37	.23	.05, .42
	Females	3.49	220	.93							
Depression	Males	4.21	223	4.14	-2.06	-4.63	434.41	.000	-2.99, -1.16	-.43	-.62, -.24
	Females	6.26	231	5.27							
Anxiety	Males	4.16	223	3.75	-2.21	-5.30	423.74	.000	-3.01, -1.42	-.49	-.68, -.31
	Females	6.37	231	5.06							
Stress	Males	5.83	223	4.24	-1.73	-4.04	447.06	.000	-2.58, -.87	-.38	-.56, -.19
	Females	7.56	231	4.89							

Table B3

*Gender Differences in Physical Activity and Mental Health in 2016.*

	Gender	Mean	N	SD	Mean difference	t	df	sig.	Bootstrappe d 95% CI	Effect size (Cohen's d)	CI around Effect size
Physical Activity	Males	2.62	254	.87	.29	3.93	470.32	.000	.14, .43	.36	.18, .54
	Females	2.33	220	.71							
Engagement	Males	3.03	249	.90	.16	1.95	464	.052	-.01, .33	.18	.00, .36
	Females	2.87	217	.87							
Perseverance	Males	3.06	249	.84	-.09	-1.09	464	.278	-.25, .07	-.10	-.29, .08
	Females	3.15	217	.91							
Optimism	Males	3.18	249	.92	.05	0.46	464	.519	-.11, .22	.07	-.12, .25
	Females	3.12	217	.88							
Connectedness	Males	3.66	249	.90	-.36	-4.26	464	.000	-.53, -.20	-.40	-.58, -.21
	Females	4.02	217	.92							
Happiness	Males	3.48	249	.98	.08	0.88	464	.381	-.10, .26	.08	-.10, .26
	Females	3.40	217	.99							
Resilience	Males	24.18	249	8.07	1.51	2.09	464	.037	.07, 2.83	.19	.01, .38
	Females	22.68	217	7.39							
Depression	Males	4.39	249	4.11	-1.00	-2.49	439.91	.013	-1.78, -.29	-.23	-.42, -.05
	Females	5.40	217	4.53							
Anxiety	Males	4.12	249	3.51	-1.73	-4.71	418.01	.000	-2.44, -.99	-.44	-.63, -.35
	Females	5.84	217	4.29							
Stress	Males	5.19	249	3.74	-2.19	-5.72	424.88	.000	-2.94, -1.41	-.54	-.72, -.35
	Females	7.38	217	4.42							

# Appendix C

Table C1

Age, Gender and Physical Activity Regressed onto Mental Health Variables – 2014 data

		N	$\beta$	t	p
Engagement	Age	383	.08	1.78	.075
	Gender		-.07	-1.54	.125
	Physical activity		.38	7.93	.000
Perseverance	Age	383	.10	2.05	.041
	Gender		.00	.09	.930
	Physical activity		.34	6.97	.000
Optimism	Age	383	.10	2.03	.043
	Gender		-.07	-1.37	.173
	Physical activity		.32	6.57	.000
Connectedness	Age	383	.06	1.16	.246
	Gender		.14	2.62	.009
	Physical activity		.20	3.88	.000
Happiness	Age	383	-.01	-.14	.888
	Gender		-.08	-1.52	.129
	Physical activity		.29	5.92	.000
Resilience	Age	-			
	Gender				
	Physical activity				
Depression	Age	389	-.01	-.14	.888
	Gender		.20	4.02	.000
	Physical activity		-.14	-2.83	.005
Anxiety	Age	389	-.01	-.26	.792
	Gender		.24	4.85	.000
	Physical activity		-.07	-1.39	.164
Stress	Age	389	.02	.35	.725
	Gender		.21	4.09	.000
	Physical activity		-.08	-1.51	.132



Table C2

*Age, Gender and Physical Activity Regressed onto Mental Health Variables – 2015 data*

		<b>N</b>	<b>β</b>	<b>t</b>	<b>p</b>
Engagement	Age		.07	1.40	.162
	Gender	417	.03	.67	.503
	Physical activity		.26	5.17	.000
Perseverance	Age		.07	1.45	.148
	Gender	417	.11	2.29	.023
	Physical activity		.26	5.30	.000
Optimism	Age		.09	1.75	.080
	Gender	417	-.01	-.22	.828
	Physical activity		.25	4.99	.000
Connectedness	Age		.04	.74	.461
	Gender	417	.15	3.07	.002
	Physical activity		.21	4.20	.000
Happiness	Age		.01	.19	.853
	Gender	417	-.07	-1.40	.162
	Physical activity		.26	5.38	.000
Resilience	Age				
	Gender	-			
	Physical activity				
Depression	Age		-.02	-.33	.744
	Gender	417	.22	4.56	.000
	Physical activity		-.13	-2.55	.011
Anxiety	Age		-.02	-.41	.684
	Gender	417	.26	5.46	.000
	Physical activity		-.09	-1.78	.076
Stress	Age		.02	.35	.729
	Gender	417	.21	4.34	.000
	Physical activity		-.09	-1.89	.059

Table C3

*Age, Gender and Physical Activity Regressed onto Mental Health Variables – 2016 data*

		<b>N</b>	<b>β</b>	<b>t</b>	<b>p</b>
Engagement	Age		-.05	-1.10	.270
	Gender	466	-.04	-.85	.396
	Physical activity		.28	6.11	.000
Perseverance	Age		.00	-.04	.968
	Gender	466	.10	2.29	.022
	Physical activity		.29	6.31	.000
Optimism	Age		.01	.20	.841
	Gender	466	.02	.42	.677
	Physical activity		.27	5.76	.000
Connectedness	Age		-.10	-2.14	.033
	Gender	466	.22	4.76	.000
	Physical activity		.12	2.60	.010
Happiness	Age		-.08	-1.81	.071
	Gender	466	.00	.06	.951
	Physical activity		.23	4.98	.000
Resilience	Age		.04	.95	.340
	Gender	466	-.06	-1.28	.203
	Physical activity		.21	4.44	.000
Depression	Age		.21	4.52	.000
	Gender	466	.11	2.33	.020
	Physical activity		-.03	-.73	.469
Anxiety	Age		.13	2.77	.006
	Gender	466	.23	5.07	.000
	Physical activity		.09	1.98	.048
Stress	Age		.16	3.40	.001
	Gender	466	.27	5.87	.000
	Physical activity		.04	.93	.351

## Appendix D

Table D1

*Moderation of Physical Activity and Mental Health by Gender – 2014 data.*

Variable	$R^2$	$N$	
Engagement	.007	383	$F(1,378)=3.29, p=.070$
Perseverance	.002	383	$F(1,378)=.85, p=.357$
Optimism	.004	383	$F(1,378)=1.67, p=.197$
Connectedness	.000	383	$F(1,378)=.10, p=.749$
Happiness	.005	383	$F(1,378)=2.05, p=.153$
Depression	.001	389	$F(1,384)=.32, p=.573$
Anxiety	.000	389	$F(1,384)=.19, p=.665$
Stress	.002	389	$F(1,384)=.68, p=.411$

Table D2

*Moderation of Physical Activity and Mental Health by Gender – 2015 data.*

Variable	$R^2$	$N$	
Engagement	.002	417	$F(1,412)=.84, p=.361$
Perseverance	.000	417	$F(1,412)=.15, p=.699$
Optimism	.000	417	$F(1,412)=.02, p=.885$
Connectedness	.006	417	$F(1,412)=2.71, p=.100$
Happiness	.004	417	$F(1,412)=1.96, p=.162$
Depression	.000	417	$F(1,412)=.02, p=.883$
Anxiety	.000	417	$F(1,412)=.06, p=.804$
Stress	.000	417	$F(1,412)=.04, p=.842$

Table D3

*Moderation of Physical Activity and Mental Health by Gender – 2016 data.*

Variable	$R^2$	$N$	
Engagement	.000	466	$F(1,461)=.04, p=.844$
Perseverance	.012	466	$F(1,461)=.01, p=.015$
Optimism	.000	466	$F(1,461)=.002, p=.966$
Connectedness	.000	466	$F(1,461)=.009, p=.925$
Happiness	.000	466	$F(1,461)=.00, p=.984$
Resilience	.000	466	$F(1,461)=.18, p=.676$
Depression	.001	466	$F(1,461)=.47, p=.494$
Anxiety	.000	466	$F(1,461)=.12, p=.728$
Stress	.000	466	$F(1, 441)=.16, p=.687$

# Appendix E

Table E1

*Model Statistics for Gender on Mental Health Mediated by Physical Activity – 2014 Data.*

	n	Path a	Path b	Path c'	Overall Model	Indirect effect [Bootstrapped 95% CIs]
<b>Engagement</b>	383	b=.31***, t(380)=3.94	b=.45***, t(379)=7.93	b=.13, t(379)=1.54	F(3,379) = 25.16***, R <sup>2</sup> =.17	b=.14 [.08, .24]
<b>Perseverance</b>	383	b=.31***, t(380)=3.94	b=.38***, t(379)=6.97	b=-.01, t(379) =-.09	F(3,379)=17.72***, R <sup>2</sup> =.12	b=.12 [.06, .20]
<b>Optimism</b>	383	b=.31***, t(380)=3.94	b=.40***, t(379)=6.57	b=.13, t(379)=1.37	F(3,379)=18.02***, R <sup>2</sup> =.12	b=.13 [.06, .21]
<b>Connectedness</b>	383	b=.31***, t(380)=3.94	b=.23***, t(379)=3.88	b=-.24*, t(379)=-2.62	F(3,379)=6.34***, R <sup>2</sup> =.05	b=.07 [.03, .14]
<b>Happiness</b>	383	b=.31***, t(380)=3.94	b=.39***, t(379)=5.92	b=.15, t(379)=1.52	F(3,379)=14.24***, R <sup>2</sup> =.10	b=.12 [.06, .20]
<b>Depression</b>	389	b=.28***, t(386)=3.61	b=-.83*, t(385)=-2.83	b=-1.83***, t(385)=-4.56	F(3,385)=9.82***, R <sup>2</sup> =.07	b=-.23 [-.53, -.05]
<b>Anxiety</b>	389	b=.28***, t(386)=3.61	b=-.33, t(385)=-1.39	b=-1.79***, t(385)=-4.85	F(3,385)=9.84***, R <sup>2</sup> =.07	b=-.09 [-.29, .02]
<b>Stress</b>	389	b=.28***, t(386)=3.61	b=-.39, t(385)=-1.51	b=-1.65***, t(385)=-4.09	F(3,385)=7.32***, R <sup>2</sup> =.05	b=-.11 [-.33, .02]

*Note.* \*p<.05, \*\*p<.001 \*\*\*p<.0005.

Table E2

*Model Statistics for Gender on Mental Health Mediated by Physical Activity – 2015 Data.*

	n	Path a	Path b	Path c'	Overall Model	Indirect effect [Bootstrapped 95% CIs]
<b>Engagement</b>	417	b=.27***, t(414)=3.61	b=.24***, t(423)=5.14	b=-.05, t(413)=-.67	F(3,413)=8.95***, R <sup>2</sup> =.06	b=.07 [.03, .13]
<b>Perseverance</b>	417	b=.27***, t(414)=3.61	b=.26***, t(413)=5.30	b=-.18*, t(413)=-2.29	F(3,413)=10.02***, R <sup>2</sup> =.07	p=.07 [.03, .13]
<b>Optimism</b>	417	b=.27, t(414)=3.61	b=.27***, t(413)=4.99	b=.02, t(413)=.22	F(3,413)=8.90***, R <sup>2</sup> =.06	b=.07 [.03, .13]
<b>Connectedness</b>	417	b=.27***, t(414)=3.61	b=.21***, t(413)=4.20	b=-.24*, t(413)=-3.07	F(3,413)=7.76***, R <sup>2</sup> =.05	b=.06 [.02, .11]
<b>Happiness</b>	417	b=.27***, t(414)=3.61	b=.30***, t(413)=5.38	b=.12, t(413)=1.40	F(3,413)=11.82***, R <sup>2</sup> =.08	b=.08 [.04, .14]
<b>Depression</b>	417	b=.27***, t(414)=3.61	b=-.76*, t(413)=-2.55	b=-2.12***, t(413)=-4.56	F(3,413)=10.78***, R <sup>2</sup> =.07	b=-.21 [-.47, -.05]
<b>Anxiety</b>	417	b=.27***, t(414)=3.61	b=-.50, t(413)=-1.78	b=-2.37***, t(413)=-5.46	F(3,413)=12.51***, R <sup>2</sup> =.08	b=-.14 [-.38, .02]
<b>Stress</b>	417	b=.27***, t(414)=3.61	b=-.53, t(413)=-1.89	b=-1.91***, t(413)=-4.34	F(3,413)=8.83***, R <sup>2</sup> =.05	b=-.15 [-.38, .00]

*Note.* \*p<.05, \*\*p<.001 \*\*\*p<.0005.

Table E3

*Model Statistics for Gender on Mental Health Mediated by Physical Activity – 2016 Data.*

	n	Path a	Path b	Path c'	Overall Model	Indirect effect [Bootstrapped 95% CIs]
<b>Engagement</b>	466	b=.29***, t(463)=4.03	b=.31***, t(462)=6.11	b=.07, t(462)=.85, p=.3959	F(92,463)=22.67***, R <sup>2</sup> =.09	b=.09 [.04, .15]
<b>Perseverance</b>	466	b=.29***, t(463)=4.03	b=.32***, t(462)=6.31	b=-.18*, t(462)=-2.29	F(3, 462)=14.54***, R <sup>2</sup> =.09	b=.09 [.04, .15]
<b>Optimism</b>	466	b=.29***, t(463)=4.03	b=.30***, t(462)=5.76	b=-.03, t(462)=-.42	F(93,462)=11.69***, R <sup>2</sup> =.07	b=.09 [.04, .15]
<b>Connectedness</b>	466	b=.29***, t(463)=4.03	b=.14*, t(462)=2.60	b=-.40***, t(462)=-4.76	F(3,462)=11.18***, R <sup>2</sup> =.07	b=.04 [.01, .10]
<b>Happiness</b>	466	b=.29***, t(463)=4.03	b=.28***, t(462)=4.98	b=-.01, t(462)=-.18	F(3,462)=11.76***, R <sup>2</sup> =.07	b=.08 [.04, .15]
<b>Resilience</b>	466	b=.29***, t(463)=4.03	b=2.03***, t(462)=4.44	b=.92, t(462)=1.28	F(3,362)=8.09***, R <sup>2</sup> =.05	b=.59 [.25, 1.08]
<b>Depression</b>	466	b=.29***, t(463)=4.03	b=-.18, t(462)=-.73	b=-.93*, t(462)=-2.33	F(3,462)=10.16***, R <sup>2</sup> =.06	b=-.05 [-.23, .10]
<b>Anxiety</b>	466	b=.29***, t(463)=4.03	b=.46*, t(462)=1.98	b=-1.85***, t(462)=-5.07	F(3,462)=10.89***, R <sup>2</sup> =.05	b=.13 [.02, .30]
<b>Stress</b>	466	b=.29***, t(463)=4.03	b=.23, t(462)=.93	b=-2.24***, t(462)=-5.87	F(3,462)=15.23***, R <sup>2</sup> =.09	b=.07 [-.08, .25]

*Note.* \*p<.05, \*\*p<.001 \*\*\*p<.0005.

## APPENDIX 12

### Conference poster and oral presentations stemming from the current PhD

- Halliday, A. J. (2018). *Involve Me in My Own Wellbeing: Using Participatory Action Research to Involve Students in Positive Education*. Oral presentation at the World Positive Education Accelerator (WPEA), Fort Worth, TX. 25<sup>th</sup>-28<sup>th</sup> June 2018. Texas, United States of America.
- Halliday, A. J. (2016). *Using Participatory Action Research to Introduce Positive Education at an Australian School*. Oral presentation at Mind Body Brain -5<sup>th</sup> Australian Positive Psychology and Wellbeing Conference, South Australian Health and Medical Research Institute. 22<sup>nd</sup> -24<sup>th</sup> September. Adelaide, Australia.
- Halliday, A. J. (2016). *Using Participatory Action Research To Introduce Positive Education at an Australian School*. Poster presentation given at The 10th Annual Florey Postgraduate Research Conference, University of Adelaide. 29<sup>th</sup> September 2016. Adelaide, Australia.
- Halliday, A. J. (2015). *An introduction to Positive Education through the PERMA Framework*. Oral presentation at the Australian Council for Health, Physical Education and Recreation Secondary Schooling Conference, Flinders University. 30<sup>th</sup> November – 1<sup>st</sup> December 2015. Adelaide, Australia.