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University of Southampton

Faculty of Environmental and Life Sciences

School of Psychology

**Understanding the Impact of Sharing Gratitude on Children's Sense of School Belonging
and Mood**

by

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Thesis for the degree of Doctorate in Educational Psychology

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Abstract

Faculty of Environmental and Life Sciences

School of Psychology

Doctorate in Educational Psychology

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Gratitude interventions are becoming an increasingly popular tool to enhance the social and emotional benefits of gratitude. Some research has proposed that gratitude interventions could be a suitable method to increase well-being amongst children, young people and young adults in education. However, questions remain over their effectiveness amongst this group. Additionally, focus has started to be placed on exploring differences between types of gratitude interventions to better understand how to accentuate the benefits of gratitude. As gratitude activities can differ in format and content, it may logically follow that they differentially impact psychological functioning and well-being.

In this thesis, I sought to explore these differences and gain a better understanding of this topic across a range of ages by carrying out two research enquiries. Chapter two presents a systematic review that examined the effectiveness of gratitude interventions on subjective well-being amongst 16-25-year-olds in education. It expanded upon previous reviews by also seeking to explore the effectiveness of different types of gratitude intervention amongst this population. Twenty-one randomised control trial studies, which compared a gratitude intervention to one or more control groups, were reviewed. Despite some mixed findings, overall, some promising positive trends for the effects of gratitude interventions on students in college or university education were found. There did not appear to be one type of intervention that stood out as more efficacious for this population than any others. Consideration of the authenticity of gratitude expression, students' sense of autonomy and the response of the recipient as possible factors for effectiveness are also discussed.

Chapter three presents the empirical study, which explored the effects of gratitude diaries on sense of school belonging and mood, in particular understanding the effect of sharing gratitude with another. A further aim was to understand the implications of dispositional gratitude on the effectiveness of gratitude interventions with children. Participants (n =245),

aged between 7 and 11 were randomly allocated to either complete a gratitude diary or neutral event diary for 4 weeks. Within each of these conditions, half were placed in a sharing condition, and the other in a non-sharing condition. Those in the sharing condition selected items from their diary each week, which were either their favourite (for those in the gratitude diary condition) or their most important learning moments (for those in the neutral event condition). These were shared with the researcher at the end of the intervention. Significant positive correlations between gratitude and sense of belonging, and gratitude and positive affect, suggested that as gratitude increased so did children's positive mood and sense of belonging. A small intervention effect was found for children who completed a gratitude diary on positive affect, but no effect was found for sense of school belonging or negative affect. Sharing gratitude was not found to have enhanced the benefits of completing a gratitude diary along. Concerning the final research question, children with lower gratitude at the start of the intervention, did not appear to benefit more than those that started with higher gratitude.

Strengths, limitations and implications of both research papers are discussed and further recommendations for progressing research are discussed.

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Research Thesis: Declaration of Authorship

Print name: Jessica Millington

Title of thesis: Understanding the Impact of Sharing Gratitude on Children's Sense of School
Belonging and Mood

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signature:

Date: 16.09.25

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Definitions and Abbreviations

ANCOVA	Analysis of Covariance
AoC	The Association of Colleges
BPS	Best Possible Selves (Type of positive psychology intervention)
CYP	Children and Young People
df	Degrees of Freedom
EBSCO	Elton B. Stephens Company
EP	Educational Psychologist
ERGO	Ethics and Research Governance Online
ERIC	Education Research Information Centre
F	F statistic comparing variances of groups in ANOVA
GAC	Gratitude Adjective Checklist
GQ-6	Gratitude Questionnaire Six Item Form
HBSC.....	Health Behaviour in School-aged Children
LS	Life Satisfaction
M	Mean
Madj	Adjusted Mean
N	Number (of cases)
NA	Negative Affect
OECD	Organisation for Economic Co-operation and Development
ONS.....	Office of National Statistics
p	Probability (statistical significance)
PA	Positive Affect
PANAS	Positive and Negative Affect Scale
PISA	Programme for International Student Assessment
PRISMA.....	Preferred Reporting Items for Systematic Reviews and Meta Analyses
PP.....	Positive Psychology

Definitions and Abbreviations

QUAY.....	Questionnaire of Appreciation in Youth
r	Pearson's correlation
R^2	R-Squared statistic
SD	Standard Deviation
SE	Standard Error
SWLS.....	Satisfaction with Life Scale
SoSB.....	Sense of School Belonging Definitions
SPSS.....	Statistical Package for the Social Sciences
$T1$	Time 1 (pre-test)
$T2$	Time 2 (post-test)
$T3$	Time 3 (follow-up)
UK	United Kingdom
US	United States (of America)
USA	United States of America
α	Cronbach's alpha coefficient
β	Beta (standardised coefficient)
ηp^2	Partial-Eta Squared statistic
χ^2	Chi Squared Statistic

Chapter 1 Introduction

1.1 Positive Psychology

The positive psychology movement was created to promote “flourishing”, living life with positive emotions, meaning, engagement, relationships, a sense of accomplishment and moving away from repairing the negatives (Seligman, 2019; Seligman & Csikzentmihalyi, 2000). Positive psychology interventions have been designed to increase positive feelings, cognitions and behaviours and can benefit an individual’s well-being, positive affect, and optimism (Dickens, 2017; Sin & Lyubomirsky, 2009). In recent years, there has been a movement for positive education (Odes & Robinsons, 2011). This approach argues that education settings are best placed to support children and young people (CYP) to not only develop academic skills, but also skills for happiness and well-being (Seligman et al., 2009).

1.2 Gratitude Definition and Interventions

Activities that cultivate a sense of gratitude are one method used to support this practice. Gratitude has been described as challenging to conceptualise. It has been classified “as an emotion, an attitude, a moral virtue, a habit, a personality trait, or a coping response” (Emmons & McCullough, 2003, p. 377). For this thesis, it shall be considered primarily as a state or emotion. Emmons and Stern (2013) referred to it as a state of thankfulness in response to the perception of personal benefit received from another. Similarly, Peterson and Seligman (2004) define gratitude as ‘a sense of thankfulness and joy in response to receiving a gift, whether the gift be a tangible benefit from a specific other or a moment of peaceful bliss evoked by natural beauty’ (p. 554). This second definition highlights two distinct types of gratitude. One type is benefit-triggered gratitude (‘gratitude to’), which is driven by the actions of a benefactor. The other, generalised gratitude (‘gratitude for’), goes beyond interpersonal interaction as it involves being thankful for various elements of life and the world around you (Lambert et al., 2009).

A variety of interventions have been developed to cultivate gratitude. Interventions have included letter writing (e.g. Armenta et al., 2022; Bono et al., 2020; Froh et al., 2009), keeping a gratitude diary (e.g., Diebel et al., 2016; Emmons & McCullough, 2003; Khanna & Singh, 2022) thinking or reflecting on a grateful moment (Renshaw & Rock, 2018), writing about gratitude (e.g., Watkins et al., 2003), implementing a psychoeducational curriculum to develop grateful thinking (Bono et al., 2020; Froh et al., 2014; Khanna & Singh, 2016), expressing thanks privately

on a web-app (e.g. Bono et al., 2020), via text (Renshaw & Hindman, 2018) or using social media (Koay et al., 2020).

1.3 Gratitude and Well-being

Gratitude has been associated with positive social and emotional outcomes and is thought to promote a series of other positive cognitive and physical experiences (Yoshimura & Berzins, 2017). The broaden-and-build theory of positive emotions proposes that positive emotions broaden one's ability to think and act in a variety of ways, promote personal, psychological, and even physical resources (Frederickson, 2001). It is thought that the relationship between gratitude and well-being may work together: gratitude leads to greater well-being, which enhances gratitude and so the cycle continues (Watkins, 2004). Gratitude is also thought to increase social outcomes because it increases pro-social emotions such as trust, compassion, empathy and sensitivity to others' needs (Algoe & Haidt, 2009; Davis, 1983; McCullough et al., 2001). As a result of these mechanisms, it has been linked to constructs associated with well-being such as life satisfaction (Bono et al, 2020), positive affect (Bono et al., 2020; Froh et al., 2008; Renshaw & Olinger Steeves, 2016) and happiness (Renshaw & Olinger Steeves, 2016). It has been inversely related to negative measures such as depression and negative affect (e.g. Bono et al., 2004; Emmons & McCullough, 2003; Watkins et al., 2003). Regarding social outcomes, it has been linked to pro-social behaviour, positive relationships, and friendship satisfaction (Bono et al., 2020; Caeon et al., 2017; Froh et al., 2008).

1.4 Impact of Fostering Gratitude on Different Groups of Individuals

Despite the aforementioned benefits of fostering gratitude, it may not be as beneficial for some individuals. Several studies have shown fewer benefits for those from collectivist cultures compared to those from individualist cultures. In a collectivist culture, individuals have an interdependent self-view, perceiving themselves as connected members of a larger social group. In an individualistic culture, there is an independent self-view, whereby individuals perceive themselves as autonomous and able to act with their agency (Boehm et al., 2011; Layous et al., 2013; Markus & Kitayama, 1991). As such, for collectivist cultures, helping and supporting is not out of the ordinary and is a typical part of everyday life. Therefore, giving and receiving may be less of an uplifting surprise compared to those who have an independent self-view (Shin et al., 2020). In Layous et al's. (2013) study, they found that practising gratitude was moderated by culture. Following a gratitude intervention, increases in well-being were reported for American participants but not for South Korean participants. The authors proposed another

theory for the less beneficial outcomes. They thought the South Korean participants may have felt a higher sense of indebtedness and guilt. Being asked to consider who you feel grateful towards can lead to feelings of indebtedness, discomfort, embarrassment and guilt (Armenta et al., 2017). It may lead to feeling obliged to repay the favour, feeling guilty for not having done so immediately and feeling uncomfortable for needing help in the first place (Armenta et al., 2017). In their view, this was likely worse for those from collectivist cultures where drawing attention to those whom you should feel grateful for could elicit a sense of “putting others out” as opposed to seeing it as an uplifting surprise (Layous et al., 2013). In Shin et al.’s (2020) study, they found that Americans reported higher state gratitude and elevation after expressing gratitude compared to a control. They also did not feel significantly more guilty or embarrassed. In comparison, Indian participants experienced no significant well-being gains but did feel more indebtedness compared to those in the control condition. Taiwanese participants also experienced no significant well-being gains but did have higher levels of guilt compared to the control group. However, it should be noted that such results have not been found conclusively in the literature. For example, American participants in this study did experience higher feelings of indebtedness after expressing gratitude to another. In addition, several studies have found a positive impact of gratitude interventions amongst participants from collectivist cultures (Dixit & Sinha, 2024; Hartanto et al., 2023; Iqbal & Dar, 2022; Işık & Ergüner-Tekinalp, 2017; Srivastava & Ghosh., 2023).

There may be other situations or specific individuals who may also not benefit as much from gratitude interventions. For example, those who have had adverse early life experiences or are currently experiencing extremely challenging circumstances. Sergeant and Mongrain (2011) found that gratitude interventions had a detrimental impact on well-being (decreases in happiness and increases in physical symptomology) for individuals who they characterised as having an “intense reliance” on others to provide them with feelings of safety and who may have experienced a difficult childhood, i.e. the loss of support from a primary caregiver.

1.5 Accentuating the Benefits of Gratitude Through Expression

Due to the increasing variations of gratitude interventions, researchers have become more interested in exploring the effectiveness of different types of gratitude interventions and their nuanced differences (Regan et al., 2023). Differences in content and delivery of intervention may lead to variation in how they impact psychological functioning and well-being. One area of focus has been on gratitude expression, the idea of sharing gratitude publicly (e.g.

to a benefactor) or privately. The benefits of sharing positive emotions, events, and experiences have been well researched and is thought to lead to both personal and relational benefits such as increases in well-being (Burton & King, 2004), positive affect, life satisfaction (Lambert et al., 2009), relationship closeness (Algoe & Zhaoyang, 2016) and lower emotional distress (Gable & Reis, 2010). One mechanism behind these positive outcomes is thought to be the act of retelling and reappraisal. In sharing with another, it may enhance the event or act's memorability (Gable & Reis, 2010). In turn, this may contribute to the cycle of "broadening and building" (Fredrickson, 2001) by continuing to cultivate further positively valenced emotions. Another way in which sharing can lead to positive outcomes is through creating positive attentional bias. By socially sharing emotional experiences, it can buffer the effect of negative experiences and mean experiences are perceived as more rewarding and pleasant (Wagner et al., 2014). Social and relational benefits can also be elicited through the positive interaction itself. Enthusiastic and supportive responses signal the recipient's interests and can lead to relationship satisfaction, commitment, and feelings of trust (Gable & Reis, 2010).

With this knowledge in mind, researchers have wondered whether expressing gratitude to another may elicit similar benefits. A recent meta-analysis specifically looked at interventions that involved gratitude expression (Kirca, 2023). They concluded that, for adults, expressed gratitude had a significant effect on psychological well-being, including happiness, life satisfaction and positive affect compared to neutral comparison groups (Kirca, 2023). As such, it may suggest that sharing gratitude could enhance positive outcomes of fostering gratitude (Davis et al., 2016; Kumar & Epley, 2018). However, little is currently known about the possible benefits of sharing gratitude amongst children and young people. In exploring this area further, it may enable practitioners to understand if sharing gratitude has uniquely different effects from fostering gratitude alone. As such, more will be known about the possible ways to accentuate the benefits of gratitude.

1.6 Well-being of Children, Young People and Young Adults

The Health Behaviour in School-aged Children (HBSC) and the World Happiness Report (2024) found the United Kingdom (UK) to be one of the countries where children had the lowest life satisfaction. The Good Child Report (2024) found 11% of children and young people had low well-being, and a larger proportion indicated that they were unhappy with school compared to any of the other nine measures, including: family, friends, health, home, future, choice and appearance (Children's Society, 2024). There is also still a significant gap between the need for

mental health support and the help that is available to children and young people (The Anna Freud Centre, 2021).

A similar picture can be seen amongst students and young people in post-16 education. The Association of Colleges' (2024) mental health survey revealed that UK colleges are still reporting high numbers of students who are presenting with mental health and well-being difficulties: 90% (16 to 18) and 86% (19+) of colleges are still reporting increases in student mental health disclosures. A similar trend is shown regarding the well-being of university students. A survey in 2017 revealed that students are experiencing lower well-being compared to other young adults and increasing rates of mental health disclosure over 10 years (Institute for Public Policy Research, 2017). More recent data in the UK found that 57% of students reported a current mental health issue, and 36% had poor mental well-being. Of these students, 30% said their mental well-being had worsened since being a student (Student Minds, 2023).

1.6 Aims and Rationale

The Department of Education (DoE, 2016) has consistently framed the promotion of positive mental health and well-being for children and young people as a multi-agency responsibility. As such, educational psychologists (EPs) are becoming increasingly involved in supporting the social, emotional and mental health (SEMH) needs of children and young people up to the age of 25. Additionally, more focus has been drawn to the use of early intervention and taking preventative action to support the well-being of CYP (Robson-Kelly, 2018). With the current demands and overstretched services, educational settings, with the support of educational psychologists, may be best placed to provide interventions of this nature. Providing interventions in education settings allows for the ability to extend the reach to a larger number of students and provide the opportunity for preventative interventions that support well-being to be introduced at an earlier stage (Clarke et al., 2021). As gratitude interventions are simple, easy to learn, easy to sustain and relatively inexpensive, they could be well placed in educational settings (Tolcher et al., 2024). EPs could help with the implementation of such interventions, providing knowledge of the evidence base to support schools to use them appropriately and beneficially.

Given the context of CYP and students' well-being, it seemed important to add to the current literature by exploring the possible benefits of gratitude interventions for this population. It also seemed important to expand upon recent studies comparing the effectiveness of various gratitude interventions. To explore this topic, I carried out two research

Chapter 1

enquiries: a systematic literature review (chapter two) and an empirical study (chapter three). The systematic literature review examined the effectiveness of gratitude interventions on outcomes related to subjective well-being amongst students in post-16 education (e.g. the equivalent of UK college, further education or university). Whilst a meta-analysis by Dicken's (2017) did include an analysis on the impact of gratitude interventions on university students, they did not consider 16-18 year olds. More articles have since been published on the impact of gratitude interventions on university or college students since this analysis; therefore, a new review is warranted. I was also especially interested to expand upon previous analyses by reviewing the effectiveness of different types of gratitude interventions for this group of individuals. Kirca's (2023) meta-analysis on gratitude expression starts to provide useful insight into this area. However, only interventions that included an expression of gratitude were included in her analysis, leaving scope for further consideration of other types of gratitude interventions. Additionally, although student participants were included in a few of the studies, Kirca (2023) does not comment on whether her positive findings were reflective of the university student population alone. Finally, despite wanting to build upon previous reviews that were meta-analyses, I chose to do a systematic literature review (SLR). I felt this was a better tool to provide a comprehensive picture of what is currently known in the research domain (i.e. summarising previous research, identifying inconsistencies, and their probable explanation, and allowing for a deeper exploration of nuanced differences between studies) as opposed to taking an objective approach to quantitatively synthesizing studies (Card, 2015; Paul & Criado, 2020). I felt that using an SLR may allow for others to glean a deep understanding of literature as well as support them in identifying gaps in this area of research (Paul & Criado, 2020).

In chapter three, the empirical study, I sought to add to the current evidence base for gratitude interventions in a primary school setting. I was particularly interested in examining the effects of gratitude diaries on sense of school belonging and mood (i.e. positive and negative affect). Continuing the theme of understanding nuanced differences between gratitude interventions, I wanted to explore the possible effects of sharing gratitude with another. To the best of my knowledge, the aspect of sharing gratitude has not been explored with children. A secondary aim was to understand the implications of dispositional gratitude on the effectiveness of gratitude interventions with children. McCullough et al. (2004) proposed a resistance hypothesis, which posits that individuals who are predisposed to being grateful may already view the world in a positive light. Therefore, no further positive experience (i.e. gratitude diary intervention) may lead to additional benefits. Exploring the effects of dispositional

gratitude might give insight into whether these interventions are best used as a universal or more targeted intervention.

1.8 Ontology and Epistemology

Critical realism posits that there are three domains of reality: the actual, the empirical and the real (McEvoy et al., 2006). The actual domain refers to what exists independent of human perception, aspects of reality that may not be experienced or observed. The empirical relates to the parts of reality that are experienced either directly or indirectly. The real refers to the mechanisms and structure that create these phenomena (McEvoy et al., 2006). These mechanisms are not open to observation but can be discovered or inferred through empirical study and the construction of theory. As such, critical realists differ from a positivist and interpretivist perspective by seeking to develop deeper levels of explanation and understanding, rather than aiming to determine generalisable laws or evaluate the lived experiences of social actors.

Whilst it is often cited that a critical realist approach is most effective using a mixed-methods design (Olsen, 2004), critical realists argue that the choice of research methods is ultimately guided by the nature of the research problem (Pratschke, 2003). In line with critical realist beliefs, this thesis was conducted with the notion that gratitude, subjective well-being, sense of school belonging and mood are phenomena that both exist and can be measured, recognising the potential for varying levels of accuracy. Both the systematic literature review and the empirical paper ultimately sought to gain a deeper understanding of the effects of gratitude interventions, recognising that differences in format, content and delivery of fostering gratitude may differentially impact psychological functioning and well-being. The purpose of both chapters was ultimately to uncover possible explanations and gain a deeper understanding of what may make fostering gratitude most effective.

From a critical realist perspective, a quantitative approach aims to identify patterns and associations, allowing for the development of reliable descriptions and comparisons (McEvoy, 2016). In turn, these may help to uncover unobservable causal mechanisms that exist in a particular set of conditions. (Mingers, 2004). Reflective of this approach, chapter three aimed to explore patterns and associations between fostering gratitude, sense of belonging and mood. The chapter also sought to explore the causal mechanism underpinning the relationship between sharing positive emotions, i.e. gratitude and its effects on social and emotional

outcomes. In considering this mechanism, the results are discussed holding in mind the questions: 'What does it indicate?' and 'What are the conditions under which an event occurred?' (McEvoy, 2016; Olsen, 2004).

1.9 Dissemination Plan

The papers have been written with possible publication in mind. Both Chapter 2 and Chapter 3 were written with the Journal of Positive School Psychology in mind. This journal focuses on personal and social well-being as well as research on human strengths and virtues. They welcome articles that evaluate the teaching or interventions related to positive psychology. It emphasises the application of psychology to education and reaches a diverse audience made up of professionals, including educational psychologists.

As well as publication, I plan to disseminate the results of Chapter 2 and chapter 3 three to my current local authority, as well as to the two schools who participated in the research.

Chapter 2 Exploring the Effectiveness of Gratitude Interventions for Students Engaged in Post-16 Education: A Systematic Review

2.1 Abstract

Gratitude interventions are becoming an increasingly popular tool to enhance the social and emotional benefits of gratitude. Recent statistics reveal a high number of students in post-16 education, either students at UK colleges or universities, are presenting with mental health and well-being difficulties. Some research has proposed that gratitude interventions could be a suitable method to increase well-being amongst this demographic. However, questions remain over their effectiveness amongst this group. The aim of this systematic literature review was to examine the effectiveness of gratitude interventions on subjective well-being amongst 16-25-year-olds in education. In particular, the review sought to examine the effectiveness of different types of gratitude intervention amongst this population. Twenty-one randomised control trial studies, which compared a gratitude intervention to one or more control groups, were reviewed. Despite some mixed findings, overall, some promising positive trends for the effects of gratitude interventions on students in college or university education were found. There did not appear to be one type of intervention that stood out as more efficacious for this population than any others. Consideration of the authenticity of gratitude expression, students' sense of autonomy and the response of the recipient as possible factors for effectiveness are also discussed.

2.2 Introduction

In recent years, the positive psychology movement has influenced the notion of individuals striving to “flourish” in life, living with optimism, good relationships, and finding meaning and purpose (e.g., Keyes & Haidt, 2003; Seligman & Csikszentmihalyi, 2000). Activities that cultivate a sense of gratitude are one method used to support this practice. Peterson and Seligman (2004) define gratitude as ‘a sense of thankfulness and joy in response to receiving a gift, whether the gift be a tangible benefit from a specific other or a moment of peaceful bliss

evoked by natural beauty' (p. 554). Within this definition, two distinct types of gratitude have been described. The first is benefit-triggered gratitude ('gratitude to'), which is a positive emotion or state of thankfulness driven by the personal benefit received from another (Emmons & Stern, 2013). The other, generalised gratitude ('gratitude for'), goes beyond interpersonal interaction as it involves being thankful for various elements of life and the world around you (Lambert et al., 2009). A variety of interventions have been devised, including letter writing (e.g., Froh et al., 2009), keeping a gratitude diary (e.g., Emmons & McCullough, 2003), thinking or reflecting on a grateful moment (Renshaw & Rock, 2018), writing about gratitude (e.g., Watkins et al., 2003) or sending a message to express thankfulness (e.g., Renshaw & Hindman, 2018). These interventions can sometimes involve expressions of gratitude to the benefactor, either publicly or privately. With its increasing popularity and a range of activities in use, it is important to examine the effectiveness of such interventions.

2.2.1 Gratitude and Well-being

A growing number of studies have explored the relationship between gratitude and well-being (e.g., Emmons & McCullough, 2003; Froh et al., 2008; Froh et al., 2009; Lyubomirsky et al., 2005; Seligman et al., 2005; Watkins et al., 2004). In particular, the impact on subjective well-being has been the source of much attention. Subjective well-being refers to an individual's cognitive and affective evaluation of their life. This can range from emotional reactions to current situations to broader judgments about their life as a whole (Diener, 2000). Thus, it is made up of several core components: life satisfaction (cognitive assessment of the quality of one's life), positive affect (the experience of pleasant emotions and moods), and low levels of negative affect (the experience of few unpleasant emotions) (Diener et al., 2005). When measuring subjective well-being, researchers will also often include happiness as one of the core components.

Experimental work has shown correlations between gratitude, well-being and several subjective well-being components (Regan et al., 2023). Gratitude has been found to be positively correlated with positive affect, happiness and life satisfaction, and inversely related to negative measures such as depression and negative affect (e.g. Bono et al., 2004; Emmons & McCullough, 2003; Watkins et al., 2003). Gratitude interventions have also been shown to have a positive impact on subjective well-being. In adult populations, they have led to higher life satisfaction, positive affect, happiness and reductions in depression and negative affect (Emmons & McCullough, 2002; Rash et al., 2011; Seligman & et al., 2005; Watkins et al., 2003). Amongst children and youth, gratitude interventions have shown similar positive results,

leading to decreases in negative affect and anxiety, and improvements in life satisfaction, optimism, positive affect and well-being (Armenta et al., 2022; Bono et al., 2020; Froh et al., 2008; Froh et al., 2014; Khanna & Singh, 2019). Despite these seemingly positive findings, some authors have argued that their effectiveness may be more limited than some would claim (Davis, 2016; Dickens, 2017). A frequent criticism offered by researchers is that in some studies, significant differences were found only when compared to a negative intervention (e.g. writing daily hassles), meaning the effects of the gratitude groups may be inflated (i.e. Emmons & McCullough, 2003 and Froh et al., 2008). Therefore, a careful review of the literature is required to better understand their effectiveness.

2.2.2 Student Well-Being

Using a positive psychology intervention, such as fostering gratitude, has been offered as a way to increase student well-being (Tolcher et al., 2024). Statistics reveal nearly one-third of 16–24-year-olds in the UK (31%) self-reported experiencing anxiety or depression between 2017 and 2018, reflecting an upward trend that has continued over the pandemic and beyond (Office of National Statistics, 2020). The Association of Colleges' (AOC; 2024) mental health survey revealed that UK colleges are still reporting high numbers of students who are presenting with mental health and well-being difficulties: 90% (16 to 18) and 86% (19+) of colleges are still reporting increases in student mental health disclosures. The survey highlighted social media, cost of living, the energy crisis, money worries, drugs and alcohol misuse, gender identity and exam pressure as possible contributing factors (AoC, 2024).

A similar trend is shown regarding the well-being of university students. A survey in 2017 revealed that students are experiencing lower well-being compared to other young adults and increasing rates of mental health disclosure over 10 years (Institute for Public Policy Research, 2017). More recent data in the UK found that 57% of students reported a current mental health issue, and 36% had poor mental well-being. Of these students, 30% said their mental well-being had worsened since being a student (Student Minds, 2023). Considering life satisfaction, the Office for National Statistics (ONS) found that during the COVID-19 pandemic, average life satisfaction among students was significantly lower than that of the general population. Although there was a rise in life satisfaction by March 2022, the average life satisfaction among students was still significantly lower than the overall adult population (ONS, 2022).

It has been suggested that cultivating gratitude in students may help them be resilient to challenges and stress, support mental well-being, connectedness and overall satisfaction with life (Seligman & colleagues, 2005; Watkins et al., 2003). Research conducted amongst

university students echoes similar benefits of gratitude described previously. It is positively correlated with academic success and positive emotions and negatively correlated with anxiety, depression and drop-out rates among university students (Emmons & McCullough, 2003; Mofidi et al., 2014). Kardas and colleagues (2019) found gratitude was correlated with optimism, hope and life satisfaction and was determined to be the most predictive of these variables for overall student well-being (Kardas, 2019). However, it should be noted that some studies have found contrary results with gratitude not being positively correlated with life satisfaction among college students (Wilcox & Nordokke, 2019).

Studies have also started to explore the effectiveness of gratitude interventions on elements of subjective well-being in this population. For example, Işık and Ergüner-Tekinalp (2017) found that university students who kept a gratitude diary for three weeks had significantly higher post-test scores on gratitude, adjustment to university life, life satisfaction, and positive affect compared to a 'business as usual' control group. Another study found that those spending five minutes reflecting on things they were grateful for showed a trend for having positive effects on happiness, life satisfaction, depression, stress, and negative affect compared to those asked to think about something they learnt (Renshaw & Rock, 2018). However, these results were not significant. As gratitude interventions are simple, easy to learn, easy to sustain and relatively inexpensive (Wood & Froh, 2020), it has been argued that they could be well placed in a post-16 education setting (Tolcher et al., 2014). Reviewing the evidence base for the use of gratitude interventions on this population would therefore be of value.

2.2.3 Previous Reviews

Several reviews have examined the effectiveness of gratitude interventions on positive change and well-being. Davis and colleagues (2016) conducted a meta-analysis to carefully consider the efficacy of gratitude interventions on anxiety and psychological well-being relative to different comparison groups. The review found a small effect on well-being compared to no intervention controls. Compared to activity-matched conditions, they found a small effect on gratitude and well-being, but no effects on anxiety. Yet, when they adjusted for publication bias, the confidence intervals included zero. They concluded there was weak evidence for the effectiveness of gratitude interventions (Davis et al., 2016). The gratitude interventions also did not outperform psychologically active conditions. However, a limitation of this review is that the authors pooled outcome measures to look at well-being as one overarching outcome. This may have diffused the effect that gratitude interventions had on individual outcomes, such as life

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satisfaction and depression (Dickens, 2017). They also combined post-test measures, whether they were conducted immediately after the intervention or at a delayed follow-up. This may have minimised the effect (Dickens, 2017).

Dickens and colleagues' review (2017), therefore, sought to expand upon these results and address the criticisms. Exploring 38 studies, they found gratitude interventions increased happiness, life satisfaction and positive affect, with small to medium effect sizes, although these differences were largest when a gratitude intervention was compared to a negative intervention condition, such as writing a hassles diary. They also found no difference between gratitude interventions and other types of positive interventions, such as imagining your best possible self or performing acts of kindness (Dickens, 2017). Reviewing differences in age groups, adults were more affected by practising gratitude than children and college students. The biggest difference between ages was found for life satisfaction and grateful mood. There was less difference for happiness, grateful disposition, or positive affect. The author proposed that the lesser impact on the student population may be due to less engagement with the activities to the same extent as adults (Dickens, 2017). She felt they may be less motivated than adults, engaging in the experiment due to course credits being offered. As there have been more articles published on gratitude in university or college students since this analysis, a new review of published studies examining college and university students alone is warranted.

Renshaw and Steeve's (2016)'s meta-analysis only included students and young people ranging from five to 21 years old. Results from the meta-analysis demonstrated that gratitude in youth is positively associated with several elements of subjective well-being (e.g., positive affect and positive self-appraisal), as well as negatively associated with negative emotions (e.g., negative affect and depression). However, when reviewing the effectiveness of interventions, they were found to be generally ineffective, except in a few isolated studies. They concluded that it was currently unclear if gratitude interventions are effective or useful for school students. A limitation of this review, however, is that only six intervention-based studies were included, with the authors themselves highlighting the need for more research before effectiveness can be more conclusively drawn. The broad age range of this review also does not allow for conclusions to be drawn about the efficacy of interventions for those over the age of 16.

Researchers have also started to explore differences between types of gratitude interventions and their nuanced differences (Regan et al., 2023). It has been suggested that expressing gratitude to another may be more meaningful and help to accentuate the benefits of gratitude (Davis et al., 2016; Kumar & Epley, 2018). Davis' (2016) review compared gratitude

interventions involving expressions of gratitude to those without an expressed component and found no discernible difference. However, only five of the 26 studies involved an expressed element. Building on this, Kirca's (2023) review included a much larger pool of studies that involved gratitude expression. They found that expressed gratitude interventions had a larger overall effect on positive indicators of psychological well-being, including happiness, life satisfaction, and positive affect, relative to neutral comparison groups. There was also no difference in efficacy if someone received the thankfulness directly or if there was no direct recipient involved. This review starts to provide useful insight into determining the elements of a gratitude intervention that are most effective. However, there is scope to expand upon this further. For example, no other type of gratitude intervention (i.e. diaries, reflective writing, etc.) was explored or potential comparisons over their effectiveness drawn. Whilst comparisons were drawn between expressing gratitude directly to another and never sharing with the benefactor, consideration was not given to other forms of expression, i.e. publicly expressing gratitude to a large group, expressing gratitude one-on-one face to face or online. Finally, although young people were included in a few of the studies, Kirca (2023) did not analyse if the positive effect found was the same for different age groups. Therefore, there is potential to expand upon these findings by reviewing different types of gratitude interventions, specifically amongst those in post-16 education.

2.2.4 Current Review

With this context in mind and given the challenges to student well-being, this review aims to explore and summarise the effects of different types of gratitude interventions amongst a student population of 16-25 year olds, aiming to explore the nuanced differences between different types of interventions and their effects. As discussed, although Dickens (2017) analysed results for the student population, more studies have since been completed, calling for further examination of this demographic. Additionally, although Kirca (2023) included some studies that had student participants, they didn't examine the effects for this group independent of an adult population. Therefore, to my knowledge, there is no current review that specifically examines the effects of gratitude interventions for this demographic alone. Furthermore, as gratitude activities can differ in format and content, it may logically follow that they differentially impact psychological functioning and well-being. Whilst expression has been explored in Kirca's (2023) review, the present review seeks to expand upon this by describing and exploring the effects of different types of gratitude intervention. In summary, this review

aims to describe and evaluate the effectiveness of different types of gratitude interventions amongst post-16 students in an education setting.

2.3 Method

2.3.1 Search Strategy

In August 2024, several scoping searches were completed, followed by a systematic search of three electronic databases. The databases included were: PsychINFO via EBSCO, Web of Science and Education Research Information Centre (ERIC). Search terms were chosen based on the results of this initial search and in line with the research question (See Table 1). The decision was made to not use terms relating to college, students or university as it led to many relevant studies being excluded from the results. The study protocol was registered with PROSPERO and the registration number is 1034204.

Table 1

Search Terms and Databases

Database	Search Terms
PsychINFO	TI (Gratitude OR grateful* OR thank* OR blessing) OR AB (Gratitude OR grateful* OR thank* OR blessing) AND TI (well-being OR well-being OR “well being” OR happiness OR “positive emotions” OR “subjective well-being” OR “subjective well-being”) OR TI (well-being OR well-being OR “well being” OR happiness OR “positive emotions” OR “subjective well-being” OR “subjective well-being” AND TI (Intervention OR activit* OR journal* OR writing OR express*) OR AB (intervention OR activit* OR journal* OR writing OR express*)
ERIC	TI, AB(Gratitude OR grateful* OR thank* OR blessing) AND TI,AB (well-being OR well-being OR “well being” OR happiness OR “positive emotions” OR “subjective well-being” OR “subjective well-being”) AND TI,AB (intervention OR activit* OR journal* OR writing OR express*) TI, AB(Gratitude OR grateful* OR thank* OR blessing) AND TI,AB (well-being OR well-being OR “well being” OR happiness OR “positive emotions” OR “subjective well-being” OR “subjective

Web of Science well-being”) AND TI,AB (intervention OR activit* OR journal* OR writing OR express*)

2.3.2 Inclusion and Exclusion Criteria

Table 2 presents the inclusion and exclusion criteria applied to all papers retrieved. Any paper that did not meet the inclusion criteria was excluded. Outcome variables related to the definition of subjective well-being: high levels of positive affect, life satisfaction, happiness and low levels of negative affect (Diener, Lucas, & Oishi, 2005). The resulting outcome variables that were included were subjective well-being, happiness, life satisfaction, positive affect, negative affect and optimism.

Table 2

Inclusion and Exclusion Criteria

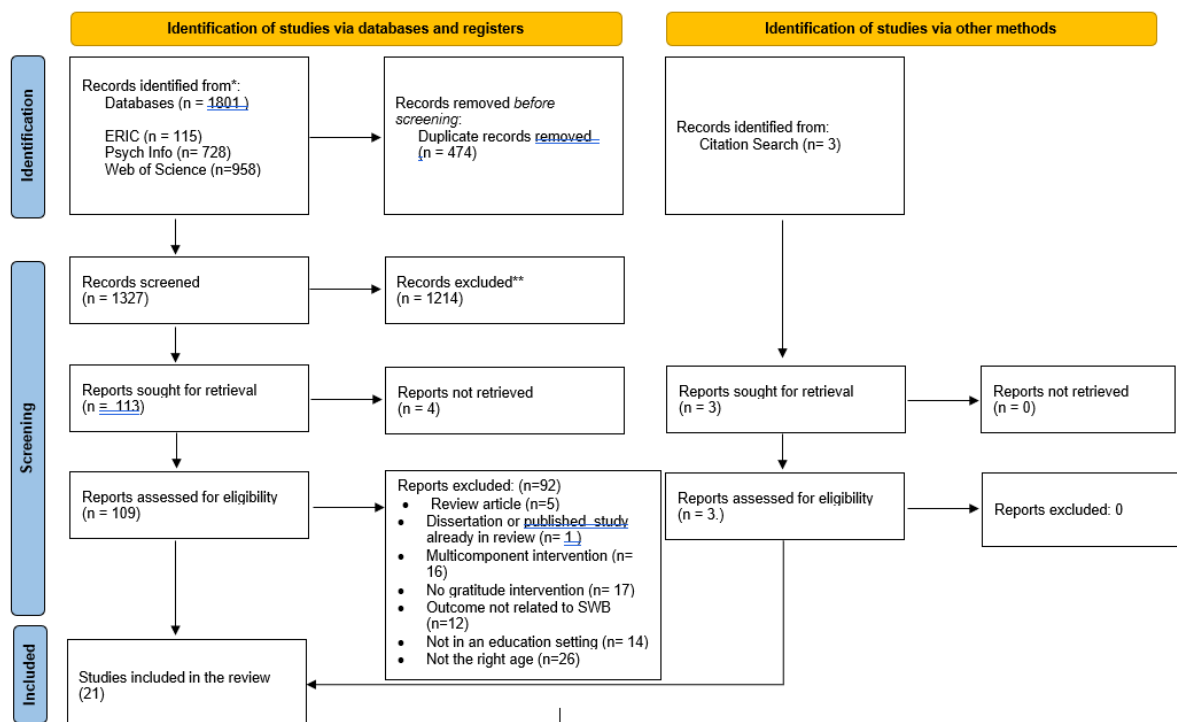
	Inclusion Criteria	Exclusion Criteria
Participants	Participants are engaging in a post-16 education e.g. a sixth-form, college or university	Participants are not engaging in post-16 education e.g. a sixth form, college or university
Type of Research	Controlled intervention study (i.e., empirical study which compared an intervention group with a control comparison group)	Review Papers. Non-empirical paper (e.g., opinion pieces, books, theoretical) Correlational design Studies contained no control group
Intervention	Some participants engaged in an intervention whose sole focus was eliciting gratitude	Interventions that did not focus on gratitude alone. Multicomponent interventions that included gratitude and another positive psychology intervention
Outcomes	Included outcomes related to subjective well-being i.e., positive affect, happiness, life satisfaction, optimism	All included outcomes are not related to subjective well-being i.e., positive affect, happiness, life satisfaction, optimism

Publication requirements	Paper available in English. Full-text access to articles published in peer-reviewed academic or professional journals or grey literature e.g. dissertations/theses	No translated version is available
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The review process is presented in the PRISMA (2020) flow diagram (Figure 1). Using the search terms from Table 1, 1801 papers were identified, 474 of which were duplicates. 1214 of the remaining 1327 papers were excluded based on manual screening of the title or abstract, leaving 113 studies to be assessed for eligibility. References of systematic reviews were hand-searched for relevant studies to include, and three further studies were identified. Following eligibility checks, a total of 21 eligible studies were included in this review.

Figure 1

PRISMA Diagram of Search Process



2.3.3 Quality Assessment

All papers were quality assessed through the Downs and Black (1998) checklist (Appendix A). This framework consists of five sections: study quality, external validity, study bias, confounding and selection bias, and power of the study. The numerical scores were primarily used to help identify the strengths and weaknesses of studies. However, cut-off points were also used to consider whether any studies ought to be removed from the review due to poor methodological quality. The studies were classified into one of the following categories: excellent (26–28 points), good (20–25 points), fair (15–19 points), or poor (<14 points). This categorisation system has been suggested and used by other reviews (Hooper et al., 2008). Based on these categories, 16 studies were rated as good (76.19%) and five as fair, (23.81%). Since all studies were deemed fair or above in terms of methodological quality, no studies were removed from the review (See appendix A for quality assessment)

2.4 Findings

2.4.1 Characteristics of Studies

Nineteen studies were conducted in university settings and two were completed in a college setting (aged 16-18). Thirteen studies took place in the United States of America (1, 4, 5, 10, 11, 13, 14, 15, 17, 18, 19, 20 and 21; See table three) three in India (3, 9 and 16) one in the Philippines (2), one in Turkey (8), one in Spain (12), one in Singapore (6) and one in the UK (7).

2.4.1.2 Participants

In 19 studies, the participants were current university students, with the majority being first-year psychology undergraduate students. In fourteen studies, the mean age of university students reported was within the range of 18.2 and 20.9. In five of the studies, the mean age of participants was not reported; however, they were described as undergraduate students attending a university and were therefore included in the review. In two studies (7 and 9) students were enrolled in school, in Years 11 or 12, or post-16 education. In the first, the mean age was 16.6, and the second had a reported age range of 16-18. Female participants made up most participants in each study. Of the studies that did report gender, the average percentage of female students across the studies was 72%. Studies were inconsistent in their reporting of ethnicity and socio-economic status (See Table 4).

2.4.1.3 Research Design

All studies were controlled intervention studies, comparing outcomes related to the subjective well-being of the intervention group to the control conditions. All studies randomly allocated participants to each condition. As such, differences in characteristics of the groups that are influential over the outcome are minimised, and this design is a more rigorous tool to examine cause-effect relationships between an outcome and intervention (Zabor et al., 2020).

2.4.1.4 Intervention

Table 3 outlines the types of gratitude and comparison interventions in each study. The gratitude interventions varied between studies and included gratitude diaries (2, 4, 5, 6, 8, 9, 10, 12, 15, 16 and 17) gratitude expression (2, 3, 7, 11, 13, 16, 18 and 19) thinking about gratitude (14 and 17) and writing a reflection about gratitude (1, 20 and 21). In two studies, the intervention included more than one of these elements (2 and 16). In some studies, the gratitude intervention involved being asked to share gratitude with others (7, 10, 13, 18, and 19). They varied in terms of whether this was done privately or publicly, and whether it was generalised gratitude being shared, or an expression of appreciation to another. Studies also varied in the number of gratitude conditions they included, with 5 studies containing two or more gratitude intervention groups (3, 10, 17, 18 and 19). The length and frequency of interventions also differed between studies, ranging from one day to ten weeks and were either completed daily or weekly.

All studies involved a neutral control condition, i.e., a comparison group that involved activities not expected to enhance psychological well-being. Twelve studies had more than one comparison condition (1, 2, 4, 5, 9, 11, 12, 13, 15, 18, 20 and 21). Three studies included a hassles comparison group, where participants were asked to record their daily hassles (4, 5 and 12). Six studies included a comparison group completing an intervention focusing on a different aspect of positive psychology, such as expressing optimism (11), reflecting on acts of kindness (2), best possible self (9 and 15), hope (21) and moments of pride (20). One study had a control comparison group which asked participants to write about an emotional issue (1). Finally, two studies included two control groups, which recorded a neutral experience, something they had learnt (13) and daily activities (8); one group shared these and the other did not. Table 3 provides an overview of the studies and their intervention approaches.

Table 3*Types of Interventions and Comparison Conditions*

Study	Authors	N	Population	Location	Gratitude Intervention	Comparison condition(s)	Length	Frequency
1	Booker and Dunsmore (2017)	161	University Students	USA	Gratitude reflective writing	Control: No writing Expressive Writing: Write about an emotional issue	4 days	Daily
2	Datu et al (2022)	107	University Students	Philippines	Gratitude Journal, Gratitude Letter, Select a favourite quote about gratitude	Kindness condition: Acts of Kindness diary, recall a kind act, select favourite quote about kindness Control: List work-related activities	3 weeks	Weekly
3	Dixit & Sinha (2024) Study 1	312	University Students	India	1: Gratitude Letter (to anyone) 2: Gratitude Letter (to a family member)	Control: Write about a typical day	1 day	15-20 mins
4	Emmons & McCullough (2003) Study 1	201	University Students	USA	Gratitude Journal	Hassles: List up to five hassles Control: List up to five events	10 weeks	Weekly
5	Emmons & McCullough (2003) Study 2	166	University Students	USA	Gratitude Journal	Hassles: List up to five hassles Comparison: list ways you are better off than others	2 weeks	Daily

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6	Hartanto et al (2023)	163	University Students	Singapore	Gratitude Journal	Neutral events diary	1 week	Daily
7	Horner (2016)	70	UK Sixth Form College	UK	Post a gratitude statement on Facebook	Post a neutral statement on Facebook	2 weeks	5 times a week
8	Işık & Ergüner-Tekinalp (2017)	21	University Students	Turkey	Gratitude Journal	No activity	3 weeks	Daily
9	Iqbal & Dar (2022)	450	Public and Private schools	India	Gratitude journal	Best possible selves: visualise their best possible self Control: Think about the details of their day	2 weeks	Daily
10	Lambert et al (2012)	158	University Students	USA	1: Gratitude Journal (share twice a week) 2: Gratitude Journal	Neutral events (share twice a week)	4 weeks	Daily
11	Lyubomirsky et al (2011)	335	University Students	USA	Gratitude letter (not shared)	Optimism: Express optimism Control: Neutral events diary	8 weeks	15 mins weekly
12	Martinez-Marti et al (2010)	105	University Students	Spain	Gratitude Journal	Hassles: Hassles diary Control: Neutral events diary	2 weeks	Daily
13	Renshaw & Hindman (2018)	115	University Students	South USA	Gratitude note (e.g., text message)	Social control: send a note to someone about something they learnt Non-social control condition: Journal about something they have learnt	2 weeks	3 times a day for

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14	Renshaw & Rock (2018)	97	University Students	South USA	Grateful Thinking	Think about something recently learnt	2 weeks	5 mins daily
15	Sheldon & Lyubomirsky (2007)	67	University Students	USA	Gratitude Journal	Best Possible Self: Write about their ideal life Control: Neutral events diary	2 weeks	Daily
16	Srivastava, & Ghosh,(2023).	80	University Students	India (Kerala and Bihar)	Gratitude Journal and Letter writing (Do both with 1 with gap between)	No intervention	1 week each	Daily
17	Tolcher et al (2024)	132	University Students	USA	1: Gratitude journal 2: Hand Over Heart Gratitude Reflection 3: Hand Over Heart Gratitude Reflection (Prompted by an App)	Free Journalling	2 months	2-5 mins daily
18	Walsh et al (2022) Study 1	369	University Students	USA	1: Gratitude Letter Shared 2: Gratitude Letter Unshared	Control: 1 Daily Activities Shared Control 2: Daily activities unshared	1 day	Once
19	Walsh et al (2023)	916	University Students	USA	1: Gratitude letter (not shared) 2: Share gratitude 1:1 via text 3: Share gratitude publicly on social media	Neutral events	1 day	Once
20	Watkins et al (2014)	129	University Students	USA	Grateful list and write how it made them feel grateful.	Pride: list three things that have gone well. Then write about how this made them feel that they are better than most	1 week	Daily

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						Control: describe a personal semantic memory		
21	Witvliet et al (2018)	153	University Students	USA	Gratitude reflective writing	Hope: Write about a specific outcome that they were hoping to experience	1 day	Once
						Control: write about their travel routes		

2.4.1.5 Measures

Following the inclusion criteria, the studies each contained an outcome variable related to subjective well-being. Whilst a small number of outcomes included vary slightly in terms of name, the outcomes broadly encompassed positive affect, life satisfaction, optimism, and happiness. Thirteen studies measured life satisfaction (1, 2, 6, 7, 8, 9, 10, 11, 13, 14, 17, 18 and 19) most frequently using the Satisfaction with Life Scale (SWLS; Diener et al., 1985). Sixteen measured positive affect or emotions (2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 17, 18 and 19) mostly using a version of the Positive and Negative Affect Scale (PANAS; Watson et al, 1998). Happiness was measured in nine studies (1, 7, 10, 11, 13, 15, 16, 20 and 21), typically using the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). Five studies measured a form of well-being (4, 11, 12, 17 and 20). Three studies specifically measured subjective well-being, with two forming this score by combining happiness, life satisfaction, and affect scores (11, 12 and 20). The other two studies measured 'well-being' in a broader sense of the word, with one using the World Health Organisation Five Well-being Index (WHO-5; 17) and the other using two questions to assess both concurrent and prospective overall well-being (4). Other measures that were included in studies that seem relevant or closely associated with the notion of subjective well-being include: optimism (13), hope (21), elevation (18 and 19), and vitality (7 & 10).

Most studies also measured gratitude as an outcome variable or to measure the effect of the gratitude intervention in eliciting this construct. A version of the Gratitude Questionnaire (GQ-6; McCullough et al., 2002, was used most frequently (1, 4, 5, 6, 7, 8, 9, 13, 14, 16, 17, 18, 19 and 21), including two studies adapted to Spanish (13) and Turkish (8). This questionnaire measures dispositional gratitude elements (frequency, span, density and intensity). One study used the 4-item gratitude subscale of the Values-in-Action Youth or VIA-Youth Inventory (Park & Peterson, 2006), one used the Gratitude Resentment and Appreciation Test (GRAT-S; Watkins et al., 2003) and one used participants' scores on the PANAS (Watson & Clark, 1999). Four studies did not measure gratitude (10, 11, 12 and 15).

2.4.2 Type of Gratitude Intervention

The gratitude interventions used within the studies can be grouped into five types: gratitude journals, gratitude expression, thinking about gratitude, writing a reflection about gratitude and interventions that involved more than one gratitude activity (multicomponent). Studies are therefore grouped according to the type of intervention. Comparisons are also

drawn between types of conditions, such as negative (hassles), neutral, or activity-matched control, such as another form of positive psychology intervention. The latter is grouped on its own in a final section (See Table 4 for information on each study).

Table 4*Date Extraction Table for Each Study*

Study	Participants					Design	Gratitude Intervention	Comparison condition(s)	Outcomes	Findings
	N	Age	Gender	Ethnicity	Setting					
1	161	Mean age 18.71 years	69.6% women 30.4% men	77.6%: White 1.2% Black or African American, 6.3%: Southeast Asian /Pacific Islander, 2.4%: Latino, 1.9%: Middle Eastern, and 10%: multiracial	University USA	RCT	G: Write about things they are grateful for (for 4 days)	Control (C): No writing Emotion Control: Write about an emotional issue	College Adjustment Test (Pennebaker, et al., 1990). Satisfaction with Life Scale (SWLS: Diener et al., 1985). Subjective Happiness Scale (Lyubomirsky & Lepper, 1999). Gratitude Questionnaire (GQ-6; McCullough et al., 2002) Other measures: depressive symptoms, trait rumination and self-disclosure	G intervention: Ns effect for positive affect ($p=.071$), negative affect: ($p=.925$), happiness ($p=.2421$) Sig increase for G group in LS ($p=.013$, $d=0.07$). Sig decrease for depressive symptoms($p=0.42$, $d= -0.08$) G vs C Sig difference for LS between G and C ($p = .046$). NS for other outcomes G vs EC NS for all outcomes

2	107	$M = 20.27$; $SD = 1.10$	Not specified	Not specified (although discussion suggests they are mostly Filipino students)	University Philippines	RCT	G: Week 1: List things you are grateful for Week 2: Write a thank-you letter Week 3: Select a favourite quote about gratitude	Kindness condition (K): Week 1: List acts of kindness Week 2: recall a kind act Week 3: select your favourite quote about kindness Control (C): Week 1 -3: list five work-related activities	6-item Riverside Life Satisfaction (Margolis et al, 2019) Positive and negative emotions Scale (Diener et al., 2009) Values-in-Action Youth or VIA-Youth Inventory (Park & Peterson, 2006) Other measures: kindness and covid anxiety	G versus C: sig difference for positive emotions ($p = .04$, $partial \eta^2 = .08$) ns differences were found on life satisfaction, ($p = .10$), negative emotions, ($p = .57$) G versus K = no sig differences for positive emotion
3	312	Age= 18.64, $SD=0.76$	65 male (61.32%) and 41 female (38.68%) participants	Not specified	University India	RCT	G1: gratitude letter to anyone (15–20 min) G2: gratitude letter to family member (15–20 min)	Control (C): – Write for 15–20 min on a typical day in your life as part of the activity.	Positive and negative affect schedule—expanded form (PANAS-X; Watson & Clark, 1999) Used Joviality and gratitude from this scale as outcome measures	G1 versus C1: Greater positive affect ($p < .00$, $partial \eta^2 = 0.04$) and joviality ($p < .00$, $partial \eta^2 = 0.03$) than control Less negative affect than control ($p < .000$, $partial \eta^2 = 0.03$) G2 Versus control – ns for positive affect ($p=0.25$), joviality (0.06) and negative

										affect ($p=0.24$)
4	201	Not specified (undergraduates)	147 women (72.06%), 54 men (27.94%)	Not specified	University USA	RCT	G: List 5 things they were grateful for (weekly for 10 weeks)	Control 1: List up to five hassles Control 2: List up to five event that had an impact on them (weekly for 10 weeks)	30 affect terms from Positive and negative affect form (PANAS-X; Watson & Clark, 1999) Global appraisals: Two questions to assess both concurrent and prospective overall well-being. GQ,-6 (McCullough, et al., 2002) Other measures: Hours of exercising and physical symptoms	Global appraisal: G > C1 and C2 rated their life more favorably ($p < .05$) Affect: ns difference between conditions for positive affect and negative affect Additional Findings: G > C1 and C2 rated having fewer physical symptoms of illness ($p < .05$) G > C1: spent significantly more time exercising (nearly 1.5 hr more per week) No effect sizes were reported
5	166	Not specified (undergraduates)	125 women (75.30%), 41 men (24.70%)	Not specified	Public university USA	RCT	G: List 5 things they were grateful or thankful for (daily for 2 weeks)	Control 1: List up to five hassles Control 2: list ways you are better off than others (daily for 2 weeks)	30 affect terms from Positive and negative affect (PANAS-X; Watson & Clark, 1999) GQ-6; McCullough, et al., 2002)	G > C1 sig increase in positive affect ($p < .05$) G vs C2 = ns for positive affect G vs C1 and C2 = ns for negative affect No effect sizes were reported

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6	163	M= 20.9, SD = 1.71	80% female	80% Chinese	University Singapore	RCT	G: Write about things they were grateful for (daily for one week)	Control (C): Write about daily events (daily for one week)	SWLS (Diener et al., 1985) Daily positive and negative affect: 10-item International Positive and Negative Affect Schedule-Short Form Scale (Thompson, 2007) GQ-6 (McCullough, et al., 2002) Other measures included: stressor exposure, daily indebtedness, perceived stress, depressive symptoms, anxiety, loneliness, coping behaviours	G v C sig lower negative affect ($p = .027$), lower for: perceived stress ($p = .058$), anxiety ($p = .008$) and depressive symptoms ($p = .040$) for G compared to C. No sig for positive affect ($p = .501$), and life satisfaction ($p = .579$) (No effect sizes reported)
7	70	16-18	51 females (72.86%) and 19 males (27.14%)	Not specified	UK Sixth Form College	RCT	G: post a status on Facebook about something they were grateful for	Control (C): post a status on Facebook about something they learnt at college	SWLS (Diener et al., (1985) The Subjective Vitality Scale (Ryan & Frederick, 1997) Global Subjective Happiness scale	Ns interaction between Subjective well-being and group ($p = .47$, $n_p^2 = .011$) <u>Moderation Analysis:</u> G1: posting grateful status had a positive impact when comments on their update were impactful

(Lybomirsky & Lepper, 1999)

Positive Activation and Negative Activation Scale

(PANAS; Watson et al., 1988)

GQ-6; McCullough, et al., 2002)

8	21	17-19 (M= 18.19, SD 2.47)	14 female 7 male	Not specified	University Turkey	RCT	G: Write about things they are grateful for (daily for 3 weeks	Control (C): No assignments	SWLS (Diener et al, (1985). Adapted by Köker (1991) to Turkish culture PANAS. Adapted by Gençöz (2000) to Turkish culture GQ-6; McCullough et al., 2002) Other measures: adapting to university life	G: sig difference between T1 and T2 for LLS $p < .01$) and positive affect ($p < .05$) G > C sig effects for LSS ($p > .01$) and positive affect ($p > .05$) (no effect sizes reported)
9	450	Mean age = 16.67, SD=.81	27.01% male 73.56% female	All Indian	Public and Private schools India	RCT	G: Counting Blessings	‘Best possible selves’: Visualise best possible self	SWLS (Diener et al.,1985).	Non-significant interaction effect for time and condition for life satisfaction.

							(Daily for 2 weeks)	Control (C): Focus on daily details (daily for 2 weeks)	The scale of positive and negative experiences (SPANE; Diener et al., 2009) Sorensen's self-esteem test (Sorensen, 2006)	Significant interaction between condition and time existed for PE ($p=.001$, $n_p^2=.05$), NE ($p=.001$, $n_p^2=.08$). Follow up results revealed: G vs 'best possible selves' Sig increase in PE than 'best possible selves' ($p=.003$) at follow up. 'best possible selves' lower NE than G after two week ($p=.030$) G vs C: Sig increase in PE ($p=.013$) compared to C, lower NE than C after follow up ($p<.001$)
10	158	17–31; mean age: 20	117 women (74.05 %)	Not specified	University USA	RCT	G1: Sharing grateful experience: kept a daily grateful experience journal (daily) Asked to share their grateful experience with someone twice a week for 4 weeks.	Control (C): Neutral interaction: keep a journal of things they had learnt and share with partner twice a week (daily for four weeks)	Subjective Happiness Scale (SHS, Lyubomirsky & Lepper, 1999) SWLS (Diener et al., 1985) PANAS; Watson, et al., 1988) – just used positive affect subscale	Positive affect: significant main effect for condition. G1: higher positive affect than G2 and C ($p<.04$, $d=.38$). Happiness: significant main effect by condition ($p<.05$). G1 higher than G2 ($p<.05$, $d=.030$) and C ($p<.01$, $d=.35$) Life satisfaction: significant main effect by condition ($p<.01$). G1 higher life

							G2: Grateful experience thought: kept a daily grateful experience journal (5 mins a day for 4 weeks)		The Subjective Vitality Scale (Ryan & Frederick, 1997)	satisfaction than G2 ($p = .03$, $d = 0.38$) and C ($p < .05$, $d = .48$).
11	335	Mean age 19.66 SD 2.91	248 female (74.03%) 87 males (25.97%)	40% Asian descent 20% were Hispanic, 17% were Caucasian, 5% were African American, 5% were Hawaiian /Pacific Islander, 6% indicated “more than one ethnicity,” and 7% identified themselves as “other.”	Public university USA	RCT	G: Convey gratitude (n=108) 15 mins a week writing a letter about grateful experiences (but not shared)	Control (C): Generate list of experiences over the last week (n=110). 15 mins listing what they had done Optimism: Additional group: express optimism (n=112). 15 mins a week for 8 weeks	Adapted PANAS; Watson, et al., 1988) 3 adjectives for positive affect and 3 for negative affect SWLS: (Diener et al., 1985) Current happiness with the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). Created a composite score of these measures to form an “overall well-being score”	<u>1st analysis:</u> Ns in well-being across group at T2 and T3 <u>2nd analysis:</u> Self-selected student (i.e. those who selected the trial they were randomly assigned to) in G1 and O1, showed increases in well-being compared non-self selected ($p = .02$, $r = .14$) and control ($p = .03$, $r = .12$) at T2. Also sig for self-selected versus control at T3 ($p = .05$, $r = .14$)

12	105	M = 20.70, SD = 1.48	95 Women (90.48%), 10 men (9.52%)	Not specified	University Spain	RCT	G: Gratitude diaries – write about grateful experiences (for 2 weeks)	Control (C): write about any event Hassles: write about daily hassles (for 2 weeks)	27 items from Positive and negative affect form (PANAS-X; Watson et al., 1999) Global appraisals of subjective well-being. assessed both concurrent and prospective subjective well-being Spanish translation of GQ-6 (McCullough et al., 2002) Other measures: pain relievers, sleep quality, quality of relationships, sensitive to others' needs.	G vs H: G sig higher positive affect than H ($p=.011$ $d=.69$) Disappeared by T3. significantly higher for global appraisals ($p=.007$) (as rated by significant others) Ns for all other measures. G vs C: Ns difference for all measures No effect sizes reported
13	115	M = 20.56, SD = 1.92	82.6% of participants identified as female	74.8% White/Caucasian, 10.4% Black/African American, 3.5% Hispanic/Latino, 7.8% Asian/Pacific Islander,	Public University USA	RCT	G: Send a note using instant communication technology (e.g., text message), to someone three times a day that expressed gratitude	Social control condition (SC): send a note to someone about something they learnt Non-social control condition (NC).	GQ-6 (McCullough et al., 2002) Life Orientation Test-Revised (LOT-R) dispositional optimism (Scheier, et al., 1994).	G vs SC Sig different for optimism ($p=.02$, $g=.55$) Ns for life satisfaction GC vs NC ns for optimism ns for life satisfaction

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				1.7% Native American, 1.7% Indian, and 1.7% other or multiple ethnicities.			(for two weeks)	Journal about something they have learnt	SWLS (Diener et al., 1985)	
								(for two weeks)	Other measures: loneliness, anxiety and depression, school membership	
14	97	Control group: 17 and 31 years ($M = 19.84$, $SD = 2.26$)	Control group: 86% female	Control group: 81.4% White/ Caucasian, 14% Black/African -American, 2.3% Asian, and 2.3% other	Public university USA	RCT	G: Think about something they are grateful for. 5 mins a day for 2 weeks	Control (C): : Think about something they have learned recently. 5 mins a day for 2 weeks	GQ-6 McCullough et al., 2002) SWLS (Diener et al., 1985) Subjective Happiness Scale (SHS) (Lyubomirsky & Lepper, 1999) PANAS (Watson, et al., 1988) Depression, Anxiety and Stress Scale (DASS-21) (Lovibond & Lovibond, 1995)	<u>Initial analysis (ANOVA)</u> G Vs C – ns main effect for each outcome <u>Follow-up univariate analysis</u> G VS C: small-effect-size increase for Happiness ($g=.26$) and Life Satisfaction ($g=.33$), compared to C (but non significant $p > .05$) Small effect size for reducing Depression ($p=.05$, $n_p^2=.04$) Stress ($p=.02$, $n_p^2=.05$) and Negative Affect compared ($p = .16$, $n_p^2=.02$) to C
		Gratitu de group: 8 to 25 years ($M = 19.98$, $SD = 1.72$)	ing as female	Gratitude group: 64.8% White/ Caucasian, 22.2% Black/African -American, 1.9% Asian, 3.7% Indian/ Pacific Islander, 3.7% Hispanic,						

				and 3.7% other						
15	67	Not specifi ed – first year underg raduat e student s	50 women (74.63 %), 17 men (25.37 %)	57 Caucasians, 10 African- American, Hispanic or Asian	University USA	RCT	G: Write down things they are grateful for	Control (C): Write daily events Best Possible Selves ('best possible selves'): Write about their ideal life	PANAS (Watson, et al., 1988)	Significant two-way interaction for condition and time for positive affect (p < .05, $d = 0.34$). Follow-up showed: G and 'best possible selves' increased in positive affect. However ns difference between them Both decreased in negative affect, ns difference between groups. $p > 0.05$). G – C: Ns difference in positive affect ($p = .20$) and negative affect
16	80	Age range 18-24, all univer sity student s	46 males (57.50 %) and 34 female s (42.50 %)	Not specified	University India	RCT	G: 2 weeks of doing three good things 1 week gap 2 weeks of gratitude lessons	Control (C): No intervention	Subjective Happiness Scale (Lyubomirsky & Lepper, 1999) Gratitude Questionnaire 6 (GQ- 6; McCullough et al, 2002)	Happiness: Sig increase from T1 – T2 for G1 ($p < .000$) Sig increase in happiness T3 to T4 for 2 ($p < .000$) Sig increase in happiness T2 to T4 for 2 ($p < .000$) (suggests higher rates of happiness after two interventions than just 1)

									Other measures: mental health and depression/anxiety stress	(No effect sizes reported) Ns for control for t1-t2 and t3- t4 Other results: sig reduction in depression, anxiety and stress for gratitude condition ($p = .000$) (not found in the control group)
17	132	18-24 (M=19, SD=1)	73.7% female, 25.6% male	white (61.1%;22.1 % Asian American, 9.2% Hispanic/ Latinx, 4.6% multi-racial, 1.5% Hawaiian/ Pacific Islander, and 0.8% American/ Alaskan Native)	Private University USA	RCT	G1: Three Good Things Gratitude Journaling – 2- 5 mins writing three things they were grateful for G2: Hand Over Heart Gratitude Reflection group were asked to place their hand over their heart twice a day, breathe deeply, and focus for a few moments on	Control (C): 2-5 mins a day journaling)	SWLS (Diener et al., 1985) World Health Organisation five well-being index (WHO-5; Mortazavi, et al., 2015) Oxford Happiness Questionnaire (OHQ; Hills & Argyle, 2002) GQ-6 (McCullough et al., 2002) Brief Resilience scale (BRS; Smith et al., 2008) PANAS (Watson, et al., 1988)	Control group: GQ-6 = Sig decrease in gratitude $p < .001$, $d = 0.45$ SWLS, WHO-5, OHQ BRS, positive affect, negative affect, DASS = ns G3: WHO-5 = Sig increase between T1 and T2 ($p < .05$, $d = 0.87$) G2: WHO-5 = Sig increase from T1 to T2 ($p < 0.05$, $d = 0.37$) Sig decrease in negative affect ($p < 0.05$, $d = 0.30$), Anxiety: ($p < 0.01$, $d = 0.46$) and Stress: ($p < 0.05$, $d = 0.43$) G1: sig increases from T1 to T 2 in well-being ($p < 0.01$, $d =$ 0.60), happiness ($p < 0.05$, d $= 0.28$) and resilience ($p <$ 0.01 , $d = 0.35$).

something or someone they were grateful for.

G3: App Prompted Hand Over Heart Group – same as G2 but the app prompted participants to practice hand over heart gratitude

Depression, anxiety and stress scale (DASS)

Frequency of gratitude practice

Sig decrease in negative affect, ($p < 0.05$, $d = 0.46$), stress ($p < 0.001$, $d = 0.77$) and anxiety ($p < 0.001$, $d = 0.56$)

2nd analysis:

G1: lower stress ($p < .05$, $d = 0.68$) negative affect ($p < .05$, $d = 0.66$) post intervention and anxiety ($p < .05$, $d = 0.62$) than control group

G2 reported lower stress ($p < .05$, $d = 0.63$) than control group post-intervention.

Frequency of practicing gratitude was sig correlated with LS ($r(107) = 0.22$, $p < 0.05$), well-being ($r(108) = 0.20$, $p < 0.0$), happiness ($r(106) = 0.33$, $p < .001$), resilience ($r(107) = 0.23$, $p < .01$) and positive affect ($r(106) = 0.39$, $p < 0.001$). Inversely correlated with stress ($r(106) = -0.23$, $p < 0.05$)

18	369	Mean Age =	78.7% female	Hispanic (37.6%), Asian	Public University USA	RCT	G1: Gratitude Unshared ($n = 102$); to write a	Control 1: Activities	GQ-6 (McCullough et al., 2002)	All g condition compared to control:
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19.52, SD, 3	(28.9%), White (14.4%), Black (4.1%), more than one (8.7%), and other (6.3%)	gratitude letter and not share it	Unshared ($n = 106$). to write a daily activities letter and not share it	G2: Gratitude Shared ($n = 74$) to write a gratitude letter and share it with their parent	Control 2: Activities Shared ($n = 87$) to write a daily activities letter and share it with their parent)	Weekly Affect and Satisfaction Measure	greater increases in state gratitude (partial $r = .15$, $p = .006$), mood (partial $r = .10$, $p = .048$) and the satisfaction (partial $r = .11$, $p = .038$) NS for: positive affect (partial $r = .06$, $p = .227$), negative affect (partial $r = -.04$, $p = .448$), life satisfaction (partial $r = .07$, $p = .158$), indebtedness (partial $r = .06$, $p = .295$), elevation (partial $r = .07$, $p = .184$), connection (partial $r = -.01$, $p = .895$), or relationship closeness (partial $r = .01$, $p = .897$).
						Affect-Adjective Scale (AAS; Diener & Emmons, (1985)) Positive affect and negative affect subscales	
						SWLS (Diener et al., 1985)	
						Elevation questionnaire (Schnall et al, 2000)	
						The studies also measured: connection, relationship closeness and indebtedness	sharing vs non sharing (G1/C1 vs G2/C2) sig improvements in gratitude (partial $r = .16$, $p = .002$), mood (partial $r = .16$, $p = .025$), positive affect (partial $r = .13$, $p = .013$), elevation (partial $r = .16$, $p = .003$), and relationship closeness (partial $r = .12$, $p = .019$) Ns group differences for satisfaction, negative affect, life satisfaction, indebtedness and connection.

							G2 VS all other groups Sig greater increase in gratitude (partial $r = .19, p < .001$) and relationship closeness (partial $r = .13, p = .015$) Ns for mood, satisfaction, positive affect, negative affect, life satisfaction, indebtedness, elevation and connection			
19	916	M =19.4, SD=2.1)	67.7% female, 31.7% male, 0.7% other (including “trans male”, “nonbinary” and “fluid”	42.4% Asian, 33.6% Hispanic, 8.8% White, 3.4% Black, 7.8% more than one race, and 4.0% other	University USA	RCT	G1: Write gratitude letters and do not share them (private gratitude) G2: Share gratitude 1:1 with benefactors via text G3: share gratitude publicly on social media Complete activity 4 times over the	Control (C): track daily activities	Gratitude: three social (i.e., gratitude “to” or person-centered) items from the GQ-6 ; (McCullough et al., 2002) and the three social items from the Multi-Component Gratitude Measure (MCGM; Morgan et al., 2017). Affect: modified 17-item Affect-Adjective Scale (AAS; Armenta et al, 2022; Diener & Emmons, 1985; Shin et al, 2021).	Gratitude conditions > C positive emotions ($p < .001$, partial $d = .29$), life satisfaction ($p = .009$, partial $d = .17$), elevation ($p < .001$, partial $d = .35$), connectedness ($p < .001$, partial $d = .33$), and support ($p < .001$, partial $d = .32$), as well as significant decreases in loneliness ($p = .048$, partial $d = -.13$) for some outcomes (e.g., life satisfaction), all of the gratitude conditions improved relative to control, while for other outcomes (e.g., positive emotions, support), the gratitude conditions stayed relatively stable while the

						course of about a week			Life satisfaction: 3 items from the Comprehensive Inventory of Thriving (CIT; Su et al., 2014) Elevation: (Schnall et al., 2010). 3-item loneliness subscale of the CIT (Su et al., 2014)	control condition actually decreased G2 vs All condition Sig increase in connectedness and support Ns for gratitude, positive emotions, social emotions, life satisfaction, and elevation, or greater decreases in negative emotions and loneliness across time (all $p > .20$).
20	129	Undergraduate psychology student	92 females (71.32%) and 37 males (28.68%)	Not specified	University USA	RCT	G: <i>gratitude 3-blessings</i> -list three good things that had happened. Then 'write about how this particular experience or event made you feel grateful.'	Control (C): describe a different personal semantic memory Pride (P): pride 3-blessing – list three things that have gone well. Then write about how this made you feel that they are better than most	Subjective well-being measure: standardised score of: SWLS (Diener et al., 1985), and the PANAS (Watson, et al., 1988) Gratitude Resentment and Appreciation Test (GRAT-S; Watkins et al., 2003) Depression: CES-D (Radloff, 1977)	Sig effect for treatment conditions on well-being measure, as predicted ($p = .031$) G vs C Sig higher well-being scores for G compared to C ($p = .04$) G vs P: Sig higher well-being scores for G compared to P ($p = .02$) Sig higher well-being scores for G compared to PC ($p = 0.04$)

21	153	16-23 M= 18.66 (SD= 0.99)	101 female (66.01 %) 53 male (34.64 %)	white (<i>n</i> = 129) bi-racial or multi-ethnic (<i>n</i> = 12), Hispanic/ Latino (<i>n</i> = 9), African (<i>n</i> = 1), African- American (<i>n</i> = 1), and Asian (<i>n</i> = 1)	Liberal Arts College USA	RCT	G: Grateful remembering – wrote about a past hope that had been fulfilled	Control (C): wrote about their travel routes from the previous day and what they anticipated about their travel routes the following day	State hope for a particular outcome questionnaire State happiness Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, & Francis, 2007). Categories tested were positive emotion, negative emotion, gratitude GQ-6 (McCullough et., al, 2002),	Gvs C sig higher for hope (<i>p</i> = .007, <i>d</i> = 0.45) and happiness (<i>p</i> = .016, <i>d</i> = 0.39) LIWC: more positive emotion (religious, insight and gratitude language) was used in G then C G: between T1 and T2 = sig increase in hope (<i>p</i> = .003, <i>d</i> = 0.36) and happiness (<i>p</i> > .001, <i>d</i> = .58) C: between T1 and T2 sig decrease in happiness (<i>p</i> = .052, <i>d</i> = 0.22) and hope (<i>p</i> = .001, <i>d</i> = 0.39)
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2.4.2.1 Gratitude Journals

Seven studies used gratitude journaling as their only gratitude intervention compared to one or more control groups. Of these seven, three studies used a hassles condition (participants were asked to write about their daily hassles). Emmons and McCullough (2003) conducted two studies exploring the effects of gratitude diaries. Study one compared university students completing a weekly gratitude journal, for 10 weeks, to a group writing a hassle diary, and another keeping a neutral events diary. Those in the gratitude condition rated their lives more favourably and were more optimistic about the week ahead than those in either control condition, although no effect sizes were reported. There was no difference between conditions for negative and positive affect. Arguing that well-being (e.g. positive and negative affect) may be more impacted with a more intensive intervention, they carried out a second study, using the same conditions, but altering the duration and frequency of the diaries to daily for two weeks. A significant increase in positive affect for the gratitude condition was found compared to the hassles condition but not compared to the neutral diary condition. They also found no significant difference in negative affect across all groups. Replicating this study, Martinez-Marti et al. (2010) found a similar result. A significant difference was found between the gratitude and hassles condition for positive affect and well-being (as determined by a significant other), with Cohen's *d* indicating medium effect sizes. However, the positive result for increases in positive affect should be held with caution as the difference was likely influenced by a decrease in positive affect in the hassles group, as opposed to increases in positive affect for the gratitude group. Additionally, no significant differences were found when the gratitude group was compared to the neutral events group. Taken together, these first studies indicate some positive effects when compared to a negative control group, but negligible effects of the gratitude intervention compared to a group carrying out a neutral activity.

Four studies that only used neutral comparison groups saw some relatively positive results. Two of these had one control condition, and the other two studies had an additional condition that used a different form of positive psychology intervention (Iqbal & Dar, 2020; Sheldon & Lyubomirsky, 2007). This section shall review the results comparing the gratitude and neutral event conditions, and the effectiveness of the other positive psychology interventions shall be examined in a subsequent section. Hartanto et al. (2023) compared university students keeping a daily gratitude journal for a week to a group who wrote about daily events. The intervention appeared to have more of an impact on negatively-valenced measures, with the gratitude group reporting significantly lower negative affect, perceived stress, anxiety

and depressive symptoms compared to the control group, although no effect sizes were reported. For positively-valenced outcomes, there was no significant difference in positive affect and life satisfaction between groups. This study was the highest ranked in terms of methodological quality. Işık and Ergüner-Tekinalp (2017) found that a group completing a gratitude diary daily for three weeks had significantly higher life satisfaction and positive affect than university students who completed no activities. However, this study was the weakest in terms of methodological quality. It used nonparametric testing; therefore, inferences made are not as strong as studies that used parametric tests. A further limitation was that only 21 participants took part in the study, reducing the chance of meeting statistical power. Additionally, in making a comparison to a group of students who did nothing, it is hard to determine if the effects are due to gratitude writing specifically or engaging in any form of reflective writing. In Iqbal and Dar's (2002) study, a significant medium effect of condition and time was found for positive and negative emotions. Their results revealed that a group of students who kept a gratitude diary daily for two weeks reported significantly higher positive emotions and lower negative emotions compared to a control group writing a neutral event diary. No significant difference between groups for life satisfaction was reported. Finally, Sheldon and Lyubomirsky (2007) found a significant small effect of condition and time for positive affect. Follow-up tests revealed a significant increase in positive affect and decrease in negative affect after the intervention for university students completing a daily gratitude journal for two weeks. The control group made no significant improvements. However, when comparing the post-test scores between the gratitude condition and those writing about their daily events, they were not deemed significantly different.

Overall, there appear to be some mixed results from the effects of gratitude diaries compared to neutral control conditions. However, these final four studies seem to provide some evidence for the positive effects of gratitude journals, particularly for negative affect, with all three studies that measured it finding significant differences, although only one study measured an effect size for this outcome. Overall, there were also increases in positive affect, and of the studies that did report effect sizes, small to medium effects were found. However, the impact on life satisfaction is minimal at best.

2.4.2.2 Gratitude Remembering or Thinking

Two studies used a gratitude remembering or thinking intervention. One study compared one gratitude intervention to a control group, whilst the other used more than one gratitude condition, and so shall be discussed in a later section. Renshaw and Rock (2018) asked

participants in the gratitude condition to think about something they were grateful for five minutes a day for two weeks. Compared to a control group who thought about something they had learnt, there was a small effect size increase in happiness and life satisfaction, and a reduction in depression, stress and negative affect. Despite this positive trend, none of these reached clinical significance.

2.4.2.3 Gratitude Reflective Writing

Three studies used a gratitude intervention where participants wrote grateful reflections. Two of these studies demonstrated positive effects of the gratitude interventions compared to neutral control groups. Compared to students writing about their travel routes, those who wrote about past hopes that had been fulfilled, there was a small effect size increase in hope and happiness, which was significant (Witvliet et al., 2018). The second study found that those who reflected on how three good things made them grateful daily for a week had significantly higher well-being scores compared to a control group who recalled a semantic memory, although no effect sizes were reported (Watkins et al., 2014). This was the case at the end of the intervention and at the five-week follow-up. The third study had more mixed results. In this case, university students who were asked to write about things they were grateful for, for four days, showed a significant increase in life satisfaction compared to a control group who were not asked to partake in any activity and an 'emotion condition' ("write about [their] very deepest thoughts and feelings about an extremely important emotional issue that has affected [them] and [their lives]"; Booker & Dunsmore, 2017). They also had significant decreases in depressive symptoms after the intervention, although this was not significantly different to either control group. Additionally, the effect of both of these significant results would not even be categorised as a small effect. There was also no effect on happiness or positive affect for the gratitude intervention. The authors suggest no effect for positive affect and happiness may have been found because of the low frequency of the intervention. Looking at the completion rate, only 24.1% completed all four writings in the gratitude and emotion condition. Unfortunately, the other two studies did not measure engagement, making it hard to draw comparisons to consider the likelihood of this claim. However, overall, except for this third study, there is some evidence to suggest that reflection may have a small effect on increasing well-being and happiness.

2.4.2.4 Gratitude Expression (Shared Publicly/One-to-One or Kept Private)

Seven studies used a gratitude intervention that involved an expression of gratitude in the form of letters, notes, online messages or verbally. Within the studies, there were two different types of gratitude expression: 'grateful for' (generalised gratitude) and 'grateful to' (benefit-triggered gratitude). The studies also differed in whether they examined differences in how gratitude was expressed (e.g. one-to-one, publicly or privately).

2.4.2.4.1 Expressions of 'Grateful for'

Two studies contained interventions where participants were asked to express what they were grateful for and share this publicly with many others or one-on-one. Horner (2016) compared college students who had posted a status on Facebook about something they were grateful for to those who posted a status about something they had learnt. They found no significant difference for the subjective well-being measure, life satisfaction, positive affect, negative affect, happiness and vitality. However, when conducting a moderation analysis there was a positive impact on subjective well-being when comments written in response to their post were impactful. Lambert and colleagues (2012) demonstrated a positive impact of sharing gratitude with a partner. The study involved two gratitude groups that were asked to keep a daily gratitude journal for four weeks. One group was asked to share their entries with a partner (romantic or close friend of their choice), twice a week, whilst the other was not. The control group was asked to keep a journal of things they had learnt and share with their partner twice a week. Those in the gratitude diary sharing condition had higher positive affect, happiness and life satisfaction compared to both the control and the other gratitude group, with small-medium effect sizes being found.

2.4.2.4.2 Expressions of 'Grateful to'

Five studies contained a gratitude intervention where students were asked to express 'gratitude to' someone in the form of letters, online messages or notes. Of these, one study asked participants to share their expressions directly with their benefactor. Renshaw and Hindman's (2018) gratitude intervention asked university students to send a note using instant communication technology to someone three times a day for two weeks. They compared this group to two active controls, one that privately wrote about something they learnt, and one that used instant communication technology to send notes about something they learnt. No significant interaction effects for condition and time were found for any of the outcome measures, suggesting no significant differences were found between any group. The gratitude

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intervention was found to have a medium positive effect on optimism and life satisfaction and a small effect on anxiety. However, these positive results were found across all conditions. Both active controls also had a small positive effect on the reduction of depression, whilst depression scores worsened in the gratitude group. Interestingly, there was also no increase in gratitude for the gratitude group, but a small effect on gratitude was found for both active controls. The authors speculate that due to the frequent and brief gratitude notes, it is possible that gratefulness became trivialised or perfunctory and therefore had negative effects on gratitude and depression (Renshaw & Hindman, 2018). The lack of effect on gratitude in the gratitude group also suggests the intervention may not have elicited the construct it was aiming to foster. Therefore, these results may be more of a reflection of the method of the intervention than the impact of fostering gratitude.

Two studies asked their participants to express their gratitude privately, so it was not expressed to the benefactor. Lyubomirsky et al. (2011) asked university students in the gratitude group to write a letter about a grateful experience weekly for 8 weeks, although this was not shared. Those in the control group were asked to complete a neutral events diary. Creating an overall well-being measure using a composite score of positive affect, negative affect, life satisfaction and happiness, they found no significant difference between groups for this outcome. The authors did not provide details of each of the components of the scores, making the reader unable to determine if the impact differed across the various measures and potentially diffusing individual effects. Dixit and Singh's (2024) study compared two gratitude interventions to a control activity of writing about a typical day. Both gratitude groups were asked to write a gratitude letter, however, one group could choose any recipient, and the other had to choose a family member. Small positive effects of cultivating gratitude were found for the gratitude group that could select any recipient compared to the neutral control group, with significantly positive affect, higher joviality and less negative affect, guilt and sadness reported. In contrast, there was no significant difference in these outcomes between the control and the gratitude intervention, where there were more restrictions on recipient selection. They did not, however, compare the two gratitude conditions with each other.

Two studies compared both public and private expressions of gratitude. Walsh et al.'s (2022) study one had two gratitude groups that wrote gratitude letters, but one group shared it with their parent, and the other did not. Similarly, their two control groups wrote a daily activities letter, with one group sharing and the other not sharing. Small positive effects were found for all gratitude conditions, with significantly greater increases in state mood and

satisfaction compared to the control conditions. However, there was no significant difference for the other outcomes (i.e. positive affect, negative affect, life satisfaction, elevation or relationship closeness). For the sharing conditions, there were small positive effects for gratitude, mood, positive affect, elevation and relationship closeness compared to those who did not share. Finally, comparing those who shared gratitude with all other conditions, a small effect was found for gratitude and relationship closeness, but no other significant results were found. These results highlight positive results for cultivating gratitude and sharing things with parents, but not necessarily improvements when these components are combined compared to when they are done alone.

The second study compared different types of gratitude expression, both publicly and privately. Participants in Walsh et al.'s (2023) study were allocated to one of three gratitude conditions or a control group. The first gratitude condition asked them to write gratitude letter but not share it (private). The second expressed gratitude to a benefactor via text (one-to-one), and the third shared gratitude publicly on social media (publicly). Overall, participants assigned to any of the gratitude interventions experienced improvements in state gratitude, positive emotions, negative emotions, elevation, connectedness, support, and loneliness, relative to the control group. Effect sizes revealed that small effects were found for all these outcomes. No significant differences were found for outcomes related to well-being between the three gratitude conditions. However, students who texted their benefactors showed the biggest boosts in social outcomes, such as social connectedness and support.

In summary, mixed results were found for expressions of gratitude. Expressions of 'gratitude for' demonstrated a positive impact of sharing gratitude one-to-one with someone, whilst those that publicly shared had no significant improvements unless they received an impactful reaction from another. Mixed results were also seen in the expression of gratitude 'to' with two studies indicating negligible effects. The other three showed more positive results for cultivating gratitude and sharing things, with small effects being found. However, little difference to well-being was found when comparing how the sharing was conducted (e.g. one-to-one, publicly or privately).

2.4.2.5 Multi-component Gratitude Intervention

Two studies used a multi-component gratitude intervention. Datu et al. (2022)'s gratitude intervention included one week of a gratitude diary, one week of writing a gratitude letter and a third week of selecting their favourite gratitude quote. Compared to a control

condition that listed work-related activities, there was a significant increase in positive emotions for the gratitude intervention, with effect sizes revealing a medium effect. Still, no significant differences were found for life satisfaction and negative emotions. The authors suggest these findings may be reflective of the collectivist culture in which this study was conducted (Datu et al., 2022). In collectivist culture, promoting an interdependent self-view and having strong relational values are highly encouraged (Markus & Kitayama, 1991). Therefore, conducting a relationally oriented intervention may not always create well-being gains (Datu et al., 2022). Srivastava and Ghosh (2023) asked participants in the gratitude condition to write a gratitude diary for two weeks and then have two weeks of gratitude lessons, with a one-week gap in between. Significant increases in happiness were found after the gratitude diaries alone, and again after the lessons. The authors state this shows a higher rate of happiness after two interventions. Unlike Datu and colleagues (2022), there were also significant effects for negatively-valenced outcomes; there was a significant reduction in depression, anxiety and stress for the gratitude condition, unlike in the control group. Interestingly, this study was also conducted in a collectivist culture, and yet, many well-being gains were made.

2.4.3 Gratitude Intervention Comparisons

Five studies directly compared different gratitude conditions. Of these, four compared the same type of gratitude intervention (i.e. diary, letter or note) but with one changed element (i.e. how the gratitude was expressed or to whom). These have been discussed in the gratitude expression section (Dixit & Sinha, 2024; Lambert et al., 2012; Walsh et al., 2022; Walsh et al., 2023). The fifth study compared different types of gratitude interventions. Tolcher and colleagues (2024) had three gratitude groups. The first kept a gratitude diary daily ('three good things'), the second focused on something or someone they were grateful for twice a day ('hand over heart'), and the third also focused on what they were grateful for but were prompted to do this by an app ('app prompted hand over heart'). They also had a control group that wrote about neutral events. Data collected two months later showed that no difference was found in adherence to their activity across groups. Significant results were found for 'the three good things' group. There was a medium positive effect on well-being, and small positive effects for happiness, and resilience. Significant decreases in negative affect, stress and anxiety, with effect sizes revealing medium effects, were also found. The 'hand over heart group' had significant increases in well-being and decreases in negative affect, anxiety and stress, all were small effect sizes. The 'app prompted hand over heart' had a significant increase in well-being alone, with Cohen's revealing a large effect. Those in the control group had no significant

increase in any measure after the intervention. The second part of their analysis led to some comparison of the groups. This demonstrated significantly higher gratitude and lower stress for ‘the three good things group’ and the ‘hand over heart’ group compared to the control. With both reporting medium effect sizes. Furthermore, ‘the three Good Things Group’ also had lower negative affect compared to the control post-intervention, again with medium effects being found. This suggests that overall, ‘the three good things’ group appeared to derive the most benefits. However, the app-based group did appear to have a low number of participants compared to the others, lowering the statistical power of these results.

2.4.4 Gratitude Intervention Versus Positive Psychology Intervention

Several studies included a gratitude intervention as well as another form of intervention related to positive psychology. Comparisons between the interventions produced mixed results. A gratitude intervention (listing three good things and how these made them grateful) produced significantly greater improvement in subjective well-being compared to a pride intervention (listing ‘three things that went well’ and writing ‘how that made you feel that you are better than most or better than average’) at follow-up (Watkins, 2014). Mixed results were found by Iqbal and Dal (2022), where the gratitude diary group reported significantly more positive emotion after two weeks than those who visualised their best possible selves. However, the ‘best possible selves’ group reported lower negative emotions than the gratitude group. No significant differences were found by Datu and colleagues (2022) comparing their multicomponent gratitude intervention with a multicomponent kindness condition for all outcomes (positive emotion, life satisfaction and negative emotions).

Two further studies compared positive psychology interventions with gratitude interventions but also examined the impact of self-concordant motivation on outcomes. In Sheldon and Lyubomirsky’s (2007) study, students were either allocated to a gratitude condition (completing a gratitude diary for two weeks), a best possible selves condition (writing about their ideal life), or a control condition (completing a neutral event diary). The ‘best possible selves’ exercise was the only group to produce a significant increase in positive affect. However, the positive affect for the gratitude group was not significantly different to the ‘best possible selves’ condition post-intervention. Participants reported greater interest in continuing with the ‘best possible selves’ exercise compared to the other conditions. This self-concordant motivation predicted whether they continued with the task after the intervention. In turn, this predicted a further increase in positive mood at follow-up. A similar trend was also shown for

negative affect, however, it was not significant. In the second study, participants were asked before the experiment to choose between participating in a “happiness” study or a “cognitive exercises” study (Lyubomirsky et al., 2011). They were then randomly assigned to complete a gratitude journal, a neutral events journal or to express optimism for 15 minutes a week, for eight weeks. As mentioned, those in gratitude conditions did not show any significant differences in well-being relative to control. However, in a subsequent analysis, they found a small effect for those who selected the “happiness” study and completed either the optimism or gratitude activity, with both groups showing greater increases in well-being after the intervention and six months later, relative to the control and those who practised these activities but did not express a wish to do so. The amount of effort used in each of the positive psychology interventions also had a significant effect on the well-being gains observed. The analysis, however, did not directly compare the two interventions to discover if there were any differences between the two.

2.5 Discussion

This review intended to examine the effectiveness of gratitude interventions on subjective well-being amongst 16-25-year-olds in an educational setting. This work was designed to expand upon previous reviews by describing the effectiveness of different types of gratitude interventions, including gratitude diaries, gratitude expression, thinking about gratitude, reflective writing and interventions with more than one of these components. It also explored the effects in contrast to different comparison groups (neutral, negative, positive psychology interventions and other gratitude groups). In this way, the current work offers a comprehensive overview of studies examining the effectiveness of different types of gratitude interventions for the post-16 student population.

The 21 studies reviewed varied in terms of the type, delivery and frequency of gratitude interventions, but all intended to increase outcomes related to subjective well-being. Overall, most studies found a positive effect of gratitude interventions on at least one of the outcomes they measured. However, which particular outcome related to subjective well-being (i.e. positive affect, negative affect, life satisfaction) was not consistent across the studies. When studies measured effect sizes, most found small effects, although some studies did find medium effects for some measures. Although these findings are mixed and varied, overall, there does seem to be some evidence to suggest that gratitude interventions could be used to support aspects of subjective well-being in this age group. As studies varied in terms of the

type, delivery, frequency and whether they included effect sizes, it is hard to draw comparisons across different types of interventions to determine if there is one type of intervention that appears more effective than the others. In addition, reflecting the meta-analyses of Dickens (2017) and Kirca (2023), gratitude interventions did not seem any more or less impactful than other positive psychology interventions.

‘Gratitude writing’ and ‘gratitude remembering’ activities demonstrated increases in outcomes related to positive aspects of well-being, such as happiness, life satisfaction, well-being and hope. Of the studies that measured negative constructs related to well-being, there was also a trend towards reductions in negative affect and depressive symptoms. Multicomponent gratitude interventions also indicated positive impacts on well-being, but with conflicting findings about whether they helped positively-valenced outcomes or negatively-valenced outcomes. Whilst most of these studies highlighted positive findings, each type of intervention was only used in two or three studies. This low number of studies makes generalisable claims about each of these types of interventions more challenging, although these initial studies show some promise.

For gratitude journals, there were varied results about their effectiveness. Researchers have previously called into question the results of studies using gratitude journals (e.g., Emmons & McCullough, 2003), highlighting that the results may have been exaggerated as significant differences were found only when compared to a negative intervention (Davis, 2016; Dickens, 2017). This review highlights this to be the case for the studies that used a negative intervention group. However, for the studies that only used a neutral condition as a comparison, there was some evidence for the positive impact of gratitude diaries compared to neutral conditions on mood, specifically in lowering negative affect and some evidence for small to medium effects on increasing positive affect or emotions. There was, however, little evidence to support the idea that completing a gratitude diary would lead to increases in life satisfaction. As studies varied in terms of intervention delivery, length and frequency, comparing the effectiveness of gratitude journals to studies that used an alternative type of intervention is challenging. However, one study did compare gratitude journals directly with gratitude-remembering interventions. In this case, those who listed three good things appeared to derive the most benefits (Tolcher, 2024). However, as there was only one study in the review that explored a direct comparison, it is hard to draw a definitive conclusion that gratitude journals are the most effective. More comparison studies are needed to explore this more thoroughly.

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Gratitude expression studies showed mixed results in improving subjective well-being. The studies using this type of intervention differed in the type of gratitude expressed ('to' or 'for') and how it was expressed (i.e., publicly, privately or one-to-one). Overall, there were mixed findings of effectiveness for both the type of expression and how it was expressed. There also did not appear to be a clear optimal way of expressing gratitude. Due to differences in delivery, length and frequency of the intervention, studies that compared different types of expression may be more helpful in drawing comparisons. In these studies, all the gratitude conditions had a positive impact on outcomes related to well-being such as positive emotions, negative emotions and elevation. There also appeared to be no differences in outcomes related to well-being when comparing how gratitude was expressed across conditions. Although it is not related to well-being as such, sharing gratitude with another appeared to be the most optimal condition for increasing social outcomes such as social connectedness and support. These results reflect the findings of Davis et al. (2016), who found no clear difference between gratitude interventions involving expressions of gratitude relative and those without an expressed component. Additionally, they partly reflect Kirca's (2023) meta-analysis that found no difference in effects between interventions where expressions of gratitude were shared directly with the recipient or if it was not shared at all. However, these results cannot confirm Kirca's (2023) overall conclusion that expressions of gratitude were more effective in increasing well-being compared to other forms of intervention.

The gratitude expression studies raised broader wonderings about the possible impact of the authenticity of expression, sense of autonomy and the response of the recipient on the effects of gratitude interventions. Considering the first point, Dixit and Singh (2024) found a significant increase in joviality and reductions in negative affect when participants could select any recipient, but this was not the case when they were given restrictions on this. They concluded this was likely because participants would have chosen a person they were truly grateful to (Dixit & Singh, 2024). As such, it may have been a more genuine expression of gratitude. Renshaw and Hindman (2018) also wondered about their non-significant results and the increase in depression scores for sharing gratitude. They proposed that perhaps the frequency of the notes (three times a day) led to gratefulness becoming trivialised or tokenistic. The importance of authenticity may also be important for gratitude interventions more broadly. In Tolcher et al.'s (2024) study, the group that was prompted by an app to reflect on grateful moments appeared to derive the least benefit. It may be that, like Renshaw and Hindman (2018), this could have trivialised the act of fostering gratitude and made it more perfunctory. Taken together, these results could reflect the importance of authentic gratitude. Perhaps

taking away the choice of the recipient, making the expressions too frequent or providing prompts on when they need to reflect could lead to more inauthentic or ungentle expressions, thus lessening the potential benefits.

The second question was about the possible influence of participants feeling a sense of autonomy in the gratitude intervention. Following Ryan and Deci's (2020, p.1) definition, autonomy "concerns a sense of initiative and ownership in one's actions. It is supported by experiences of interest and value and undermined by experiences of being externally controlled". In Dixit and Singh's (2024) study, a sense of autonomy in who participants shared gratitude with may have been as equally impactful as the authenticity it created. Looking beyond the gratitude expression studies, Sheldon and Lyubomirsky's (2007) study also highlighted the importance of choice. Participants who selected to participate in a "happiness" study and were then assigned to a gratitude condition likely felt a sense of autonomy. Their results demonstrated that those in this condition reported improved overall well-being after the intervention and six months later, relative to those who completed the activities but did not express a wish to do so. Since fulfilling a sense of autonomy is a core component of Ryan and Deci's (2020) self-determination theory, it may be that allowing choice leads to more motivation for completing the gratitude intervention. This idea is also closely linked to the importance of self-concordance, aligning personal goals with people's interests and core values. Sheldon and Elliot's (1999) model asserts that when an activity aligns with our values and interests, an individual is more likely to put sustained effort into achieving the goals. As a result of attained self-concordant goals, the individuals will gain greater well-being benefits. Indeed, in Lyubomirsky and colleagues' (2011) study, self-concordant motivation predicted whether participants continued with the gratitude intervention, which in turn predicted a further increase in positive mood at follow-up. Therefore, it may be that evoking a sense of autonomy or aligning interventions with values may be significant for gratitude interventions involving expression and more generally.

A final point concerning gratitude expression was the findings from Horner's (2016) study, which revealed the potential importance of the recipient's response. Only when participants received an 'impactful' response were positive effects on well-being found. The importance of recipient response has been highlighted by previous research. Enthusiastic and supportive responses signal the recipient's interests and can lead to positive social and emotional outcomes (Gable & Reis, 2010; Lambert et al., 2012). In Lambert et al.'s (2012) study five, students who received an active, enthusiastic response from a partner following test

results being shared showed significantly higher positive emotions than those who received a response with a more neutral tone. Although the response given was not to an expression of gratitude, it still suggests that the reaction of a partner may be an important factor to consider when developing a gratitude expression intervention. Therefore, a better understanding of the importance of recipient response may be a worthy subject for future studies.

2.5.1 Implications and Future Research

Despite some varied findings, overall, there are some promising positive trends for the effects of gratitude interventions on aspects of subjective well-being for students in college or university education. The mixed results make it hard to determine exactly which outcome measures are most affected by gratitude interventions, and also make it hard to determine if there is one type of gratitude intervention that is more effective than the others. However, considering the interventions are cost-effective, easy to carry out, easy to learn and can easily fit into a busy student schedule, they may be a good candidate for supporting subjective well-being in post-16 students. They may be especially helpful for students who are explicitly seeking positive change to their well-being and are willing to commit to an intervention. The mixed results may also suggest that there may not be one way that is the most efficacious for all. As Sheldon and Lyubomirsky (2004) assert, it may be the case that some people feel uncomfortable sharing, or others have difficulty writing daily gratitude and therefore will not see the same benefit as others. Therefore, tailoring interventions to the motivations of the individual may be the optimal way to see effective change.

This review also brought up further questions that would be valuable for future research to explore. For example, it was hard to draw a direct comparison between different types of studies due to the differences in terms of the type, delivery and frequency of gratitude interventions. More randomised control trials that directly compare different types of gratitude interventions could be valuable to determine if there is a type of intervention that is more effective for this age group. More work is needed to better understand the nuanced differences in gratitude expression. Whilst there seemed to be no discernible differences, questions were raised over the importance of recipients' responses, ensuring the authenticity of the expression and considering how interventions allow students to feel a sense of autonomy. Furthermore, positive trends were shown for gratitude reflective writing and gratitude thinking, but only a small number of studies met the criteria for review. Due to these promising results, replication of these studies would be helpful to make more generalisable claims about effectiveness.

Chapter 3 Understanding the Impact of Sharing Gratitude on Children's Sense of School Belonging and Mood

3.1 Abstract

Research exploring the effects of gratitude intervention amongst CYP has presented mixed findings. Whilst some have demonstrated positive effects of gratitude interventions on social and emotional outcomes, others have found less favourable outcomes, leading to questions remaining over their efficacy. These questions have led researchers to consider the benefits of exploring the nuanced differences between gratitude interventions in the hope of understanding which components make them more efficacious. One such component is the idea of sharing gratitude. This study sought to add to the literature by exploring the effects of gratitude diaries on sense of school belonging and mood. A secondary aim was to understand if sharing things children are grateful for has uniquely different benefits to cultivating gratitude alone. A further aim was to understand the implications of dispositional gratitude on the effectiveness of gratitude interventions with children. Participants ($n = 245$), aged between seven and eleven, were randomly allocated to either complete a gratitude diary or a neutral event diary for four weeks. Within each of these conditions, half were placed in a sharing condition, and the other half in a non-sharing condition. Those in the sharing condition selected items from their diary each week, which were either their favourite (for those in the gratitude diary condition) or their most important learning moments (for those in the neutral event condition). These were shared with the researcher at the end of the intervention. A small intervention effect was found for children who completed a gratitude diary on positive affect, but no effect was found for sense of school belonging or negative affect. Sharing gratitude was not found to enhance benefits related to sense of belonging, positive or negative affect relative to completing a gratitude diary alone. Concerning the final research question, children with lower gratitude at the start of the intervention did not appear to benefit more than those who started with higher gratitude.

3.2 Introduction

There has been an increase in the popularity of the positive psychology movement in recent years. As a result, there has been a focus on developing qualities associated with thriving and flourishing, such as gratitude (Keyes & Haidt, 2003). Attention has now been drawn to the possible benefits that gratitude can have for children and young people. In the school setting, gratitude has been associated with academic achievement, school satisfaction, learning motivation and engagement (Armenta et al., 2022; King & Datu, 2018). It has also been associated with social and emotional outcomes. Positive associations have been found with gratitude and constructs associated with well-being, such as life satisfaction (Bono et al., 2020), positive affect (Bono et al., 2020; Froh et al., 2008; Renshaw & Olinger Steeves, 2016) and happiness (Renshaw & Olinger Steeves, 2016). Regarding social outcomes, it has been linked to pro-social behaviour, positive relationships, and friendship satisfaction (Bono et al., 2020; Caleon et al., 2017; Froh et al., 2009).

3.2.1 Gratitude Link to Social and Emotional Benefits

There are several theories which offer insight into the possible social and emotional benefits of gratitude. Frederickson's broaden and build theory (2002) proposes that positive emotions broaden thought-action repertoires and develop personal, psychological and physical resources (Frederickson, 2001; Lambert et al., 2012). This contrasts with 'negative' emotions (in line with existing research, the term 'negative' will be used throughout this paper to refer to unpleasant feelings; it is acknowledged, however, that this can be an unhelpful term to use around children and young people in particular, since there is a danger this will be interpreted as unpleasant feelings such as anger or anxiety being 'wrong' in some way) that are thought to narrow our thought-action repertoires, drawing our attention to responding to threats. Positive emotions, such as gratitude, are also thought to promote resilience, helping people to cope with stressful life events and reframe difficult experiences more positively (Lambert et al., 2012; Watkins, 2004; Watkins et al., 2008). The relationship between gratitude and well-being might also be reciprocal. Gratitude may enhance well-being, which might help people to recognise the positives in life; this could then further enhance gratitude, and so the cycle continues (Watkins, 2004).

It has also been suggested that gratitude might support the development of social resources. This is thought to be in part because it increases pro-social emotions such as trust,

compassion, empathy and sensitivity to others' needs (Algoe & Haidt, 2009; Davis, 1983; McCullough et al., 2001). Gratitude is also thought to lead to a positive attentional bias, such that people notice more positive stimuli in their environment, perceive help as being more beneficial and the behaviour of others as being more altruistic (Wood et al., 2010). Noticing what others have done for you can induce the feeling of being loved and cared for (Reynold, 1983). As such, gratitude has been linked to the development of positive relationships, increased relationship satisfaction and perception of social support (Caleon et al., 2017). The development of positive relationships, in turn, supports well-being. It helps people develop a positive self-concept and provides them with a sense of resilience, knowing they have social support to cope with stressful events (Emmons & Mishra, 2011; Fredrickson, 2004a, 2004b).

3.2.2 Gratitude Intervention in Schools

Examining the potential social and emotional benefits of gratitude interventions is relevant given the context of children and young people's (CYP) well-being in the UK. The Health Behaviour in School-aged Children (HBSC) and the World Happiness Report (2024) found the UK to be one of the countries where children had the lowest life satisfaction. The Good Child Report (2024) found 11% of children and young people had low well-being. More children and young people indicated that they were unhappy with school compared to other measures including family, friends, health, home, future, choice and appearance (Children's Society, 2024). Linked to the idea of unhappiness in school, a recent Programme for International Student Assessment (PISA) reported that only 64% of students feel they belong at school (Mission 44, 2024). This is well below the Organisation for Economic Co-operation and Development's (OECD) average of 75%. (OECD 2024 as cited in Mission, 44, 2024).

Several gratitude interventions have been devised to foster gratitude in CYP. These include gratitude diaries (Diebel et al., 2016; Khanna & Singh, 2022), gratitude letters (Armenta et al., 2022; Bono et al., 2020; Froh et al., 2009), and a web-app that allows for journalling and expressing thanks privately (Bono et al., 2020; Bono et al., 2023). As these are cost-effective, easy to implement and have been used both at a targeted and universal level, they could be a promising candidate for supporting emotional and social outcomes for CYP in schools.

Studies have shown a positive effect of gratitude interventions on the well-being of CYP. For example, Froh and colleagues (2008) found that young adolescents who recorded five things they were grateful for, for two weeks, had reduced negative affect, and increased optimism and school satisfaction compared to a comparison group who recorded their daily

hassles. Children who engaged in a five-week gratitude curriculum that included gratitude journaling and writing gratitude notes to others had increased positive affect, positive feelings, life satisfaction and gratitude compared to a control group (Khanna & Singh, 2016). Similarly, Bono and colleagues (2020) reported reductions in anxiety symptoms and negative affect as well as increases in life satisfaction and positive affect for CYP who engaged in a psycho-educational curriculum related to grateful thinking and used a web-app that allowed for journaling and expressing thanks privately. Positive effects of gratitude interventions on social outcomes have also been found. In Bono and colleagues' (2020) aforementioned study, they found increased friendship satisfaction compared to a control group. In a separate study, those in a multicomponent gratitude intervention reported higher relatedness with parents and peers compared to those in a waitlist control (Caleon et al., 2017).

Themes of positive relationships and relatedness are linked to the concept of school belonging. This has been defined as the extent to which students feel accepted, respected, included, and supported by others, particularly by adults and peers in the school environment (Goodenow & Grady, 1993). Sense of School belonging has been associated with well-being, such as higher rates of happiness, lower rates of anxiety and lower rates of depression (Korpershoek et al., 2019; Prince & Hadwin, 2012). To my knowledge, only one published and peer-reviewed study has examined the use of a gratitude intervention for increasing school belonging. Diebel and colleagues (2016) found that seven- to 11-year-olds who kept a gratitude diary for four weeks experienced an increased sense of school belonging and gratitude compared to a control group keeping a neutral events diary.

Despite these promising results, some studies have not found the same benefits of fostering gratitude. Owens and Patterson (2013) reported no intervention effect on life satisfaction, positive and negative affect or self-esteem compared to a neutral diary. Similarly, Khanna and Singh's (2022) findings suggest there were no significant changes to participants' perceived stress, meaningfulness, engagement, or life satisfaction. Indeed, the gratitude journaling group in this study was even found to have significantly lower well-being scores at the end of the intervention. In a meta-analysis on five gratitude interventions, Renshaw and Olinger Steeves (2016) concluded that, overall, gratitude interventions were generally ineffective. However, more studies have been conducted since this review, and these have asserted evidence for a small positive effect on positive affect and happiness against passive controls (Bono et al., 2020; Khanna & Singh, 2016). Therefore, there are still some questions around the efficacy of the interventions amongst this demographic. As such, more research is needed.

3.2.3 Sharing Gratitude

Researchers have started to consider the benefits of exploring the nuanced differences between gratitude interventions in the hope of understanding which components make them more efficacious (Regan et al., 2023). One such component is the idea of expressed gratitude, meaning the expression of gratitude to another person through verbal or written means. This can be done with or without the expression directly to another. It can also include different types of gratitude: benefit-triggered gratitude ('gratitude to'; thanking a particular person) or generalised gratitude ('gratitude for': appreciating your life, experiences and the world around you). A recent meta-analysis concluded that expressed gratitude had a significant effect on psychological well-being, including happiness, life satisfaction and positive affect compared to neutral comparison groups (Kirca, 2023).

Within this area of focus, researchers have started to explore the positive effects of sharing gratitude directly with another. So far, much of the research has been participants sharing 'gratitude to' their benefactors. For example, Dixit and Singh (2024) found that participants who shared gratitude with a person of their choice had a significant increase in joviality and reductions in negative affect compared to a control group who wrote about a typical day and did not share. Walsh and colleagues (2022) found sharing gratitude with a parent led to significant benefits for university students on mood, positive affect, elevation and relationship closeness compared to those who did not share. However, these same effects were found for students who shared a neutral interaction with their parents.

Less focus has been placed on sharing 'gratitude for' with another person, and yet the benefits of sharing positive emotions, events, and experiences are well known. The process of reflecting on or sharing positive events or personal good fortune, deriving additional or more lasting benefits from them, has been known as 'capitalisation' (Langston, 1994). The result of such an interaction is thought to lead to both personal and relational benefits such as increases in well-being (Burton & King, 2004), positive affect, life satisfaction (Lambert et al., 2009), relationship closeness (Algoe & Zhaoyang, 2016) and lower emotional distress (Gable & Reis, 2010). It is thought that the retelling of an event or experience may enhance its memorability and maximise the event's significance (Langston, 1994). This may contribute to the cycle of "broadening and building" (Fredrickson, 2001) by continuing to cultivate further positively valenced emotions. Socially sharing emotional experiences could also buffer the effect of negative experiences by creating a positive attentional bias such that experiences are perceived as more rewarding and pleasant (Wagner et al., 2014). Social and relational benefits can also be elicited through the positive interaction itself. Enthusiastic and

supportive responses signal the recipient's interests and can lead to relationship satisfaction, commitment, and feelings of trust (Gable & Reis, 2010).

To my knowledge, only one published and peer-reviewed study has examined sharing 'grateful for' with another person. Lambert and colleagues (2012) found that university students who completed a gratitude journal and shared entries with a partner had increased happiness, life satisfaction and vitality compared to those who did not share their journal or those who shared neutral events with a partner. They concluded there is a distinct benefit to sharing one's grateful experiences with another, as opposed to sharing a neutral interaction or simply writing a grateful experience down (Lambert et al., 2012). Referring to the concept of capitalisation, it may be that sharing specific gratitude entries allows for further reappraisal of the situation, enhancing its memorability and the positive emotion, compared to just writing it down alone. This study also only looked at the impact of well-being and did not explore the possible positive effect on social outcomes. Therefore, further exploration and study are required.

Among children, the impact of sharing gratitude is not as well investigated. Two studies have included an aspect of sharing gratitude as part of their intervention. In one, CYP could express gratitude to others on a web-app (Bono et al., 2020). In the other, they could write a gratitude letter and had time to share who they were thankful for within the context of a group or class discussion (Caleon et al., 2017). The results were positive for both interventions, with significant decreases in anxiety and negative affect and increases found in positive affect, life satisfaction and friendship satisfaction (Bono et al., 2020) and reported improvements in students' relationships with their parents and peers (Caleon et al., 2017). However, as the sharing aspects of these interventions were just one part of several other features, it is hard to conclude the possible benefits of sharing alone. Additionally, these examples involved sharing gratitude to a benefactor, as opposed to sharing non-interpersonal gratitude.

Overall, more research is needed to understand if sharing things children are grateful for, is uniquely different to sharing neutral information or cultivating gratitude alone. This will hopefully add to the literature on determining which components of a gratitude intervention make it most efficacious.

3.2.4 Impact of Dispositional Gratitude

In addition to understanding the aspects of a gratitude intervention that make it more effective, there are also questions to ask about the impact of trait gratitude. McCullough et al.

(2004) proposed a resistance hypothesis, which posits that individuals who are predisposed to being grateful may already view the world in a positive light such that no further positive events or experiences (i.e., gratitude diary intervention) may lead to additional benefits. In line with this theory, Rash et al. (2011) found gratitude interventions were most effective in raising life satisfaction if participants had low dispositional gratitude compared to those who rated themselves high on gratitude. They suggested there could be a ceiling effect to the increase in recollection of positive events that occurs through the practice of gratitude. Among CYP, Froh et al. (2009) explored the resistance hypothesis but with positive affect. Those who were low in positive affect at baseline reported greater increases in gratitude and positive affect after the intervention than those who were high in positive affect at baseline. However, to the best of my knowledge, the effects of gratitude interventions on children low in gratitude at baseline have yet to be examined. Exploring its effects may help to understand whether these interventions are more useful as a targeted intervention, amongst children with lower gratitude, than as a universal intervention.

3.2.5 Research Questions and Hypotheses

The current study seeks to explore the effects of gratitude diaries on children's sense of school belonging and mood, with particular focus on the impact of sharing selected entries from these diaries. A final aim of this thesis is to explore the implications of dispositional gratitude on the effectiveness of gratitude interventions with children. Thus, the research questions are as follows:

- Does completing a gratitude diary increase children's sense of school belonging (SOSB) and positive affect, and decrease negative affect?
- Does sharing entries from gratitude diaries increase children's sense of school belonging (SOB) and positive affect, and decrease negative affect?
- Are gratitude diary interventions more effective on children with lower dispositional gratitude?

Hypotheses:

1. Completing a gratitude diary will lead to an increase in children's sense of school belonging and positive affect, and a decrease in negative affect relative to completing a neutral event diary.

2. Children completing a gratitude diary and sharing selected entries will have enhanced benefits in the sense of school belonging, positive affect and negative affect.
3. Children with lower gratitude at baseline, who complete gratitude diaries, will show a greater increase in their sense of belonging and positive affect, and a greater decrease in negative affect, relative to children with higher gratitude scores at baseline.

3.3 Method

3.3.1 Participants

Participants were recruited from two Primary schools in the South of England using convenience and purposive sampling. They were approached based on the researcher's contacts in the local area and knowledge of schools that may be interested in a gratitude intervention through their work with the local mental health in schools team. One school was also approached due to the known ethnic diversity of pupils. Pupils in the first school were from a varied range of ethnic backgrounds, with close to 80% of pupils having English as an additional language and over 30 different languages spoken by pupils in the school. The school also had around a quarter of students eligible for pupil premium. Eight classes were invited to join from year three to year six. The second primary school was less diverse in relation to ethnicity, with most students being white British. They also had 6% of children eligible for pupil premium. Two classes from this school participated, meaning a total of 290 children between the ages of seven and 11 were invited to participate in the study. An opt-out consent procedure was used. Before the task started, six parents did not consent for their child to participate, and 10 more withdrew consent during the process, leaving 274 participants.

Before the intervention started, all participants were randomly allocated using an online research randomiser to one of four groups. Two groups would complete gratitude diaries, with one in a sharing condition and one in a non-sharing condition. The other two groups would complete neutral events diaries, with one in a sharing condition and one in a non-sharing condition. This amounted to four groups: gratitude diary sharing, gratitude diary non-sharing, neutral event diary sharing, and neutral event diary non-sharing.

3.3.2 Measures

Participants were asked to complete questionnaires measuring gratitude, mood (positive affect and negative affect) and sense of school belonging. These measures were completed before the intervention started, after the gratitude diaries had been completed (4 weeks later) and at follow-up (three weeks later).

3.3.2.1 Gratitude

The Questionnaire of Appreciation in Youth (QUAY; Smith, 2021) consists of 12 items relating to all aspects of gratitude (see Appendix C). Respondents are asked to indicate how often each statement was true for them on a scale from one (never) to five (always). It has three subscales: gratitude, appreciation and sense of privilege. The items achieved between satisfactory to excellent reliability at all three time points (T1 $\alpha = 0.74$; T2 $\alpha = 0.94$; T3 $\alpha = 0.95$)

3.3.2.2 Sense of School Belonging

The Belonging Scale (Frederickson & Dunsmuir, 2009) is a 12-item self-report questionnaire containing a three-point response scale: 'no not true', 'not sure' and 'yes true' (see Appendix D). It is designed to measure the sense of belonging a participant feels at school. It was adapted from the Psychological Sense of School Membership Scale (Goodenow, 1993) to make it suitable for British children and a younger age group. The items were deemed to have good to excellent internal consistency at all three time points (T1 $\alpha = 0.82$; T2 = 0.94; T3 $\alpha = 0.96$)

3.3.2.3 Mood

Mood was measured using the Positive and Negative Affect Schedule for Children--Short Form (Ebesutani et al., 2012). This scale is revised from the Positive and Negative Affect Schedule for Children (PANAS-C, Laurent et al., 1999), a 27-item self-report measure used to measure positive affect in children and adolescents (see Appendix E). The positive PANAS-C short form reduced the number of items to 10. The positive affect items are joyful, cheerful, happy, lively and proud. The negative affect scale includes miserable, mad, afraid, scared and sad. The measure asks children and young people to rate these based on how often they have felt that way in the past week, using a five-point Likert scale. The test-retest reliability scores were deemed to be between satisfactory and excellent internal consistency at all three time points (see Table 5)

Table 5*Cronbach Alpha for PANAS-C Subcategories Across Time Points.*

	Time 1	Time 2	Time 3
Positive Affect	$\alpha = 0.79$	$\alpha = 0.92$	$\alpha = 0.92$
Negative Affect	$\alpha = 0.71$	$\alpha = 0.81$	$\alpha = 0.82$

3.3.3 Procedure

Ethical Approval to carry out the study was obtained from the University of Southampton Faculty of Psychology Ethics Committee and the university's Research Integrity and Governance team via the University of Southampton's Ethics and Research Governance Online (ERGO II) portal (Appendix F). Information about the study was sent to two primary schools (Appendix G). Gatekeeper consent (from the schools' headteachers) was sought (Appendix H). Once this was received from both schools, parents/carers of all children in the participating classes were sent documents, informing them about the study and providing them with the opportunity to opt out for their child (see Appendix I). Opt-out consent was deemed appropriate as no harm to children was anticipated and the intervention would create minimal impact on regular teaching. Subsequently, a meeting with staff was held in each school, providing guidance and information about the interventions.

One week before the intervention started, baseline measures of the QUAY, Sense of Belonging Scale and the PANAS-C short form were completed by all participating children by hand or their typical way of completing a task (i.e., in some cases, an adult could support by scribing or re-reading the question to the children). This was aided by the researcher reading the questions out loud to children in their classes. Following the completion of the questionnaires, the researcher provided an introduction for the children in groups according to which condition they had been randomly allocated (gratitude sharing, gratitude not-sharing, neutral events sharing, and neutral events non-sharing). Children were blind to the fact that there were other conditions and were encouraged not to discuss their diaries with others.

Those in the gratitude conditions were asked to "write down three things that you feel grateful or thankful for that happened during your school day" (Appendix J). When introducing this to the children in the gratitude condition, a discussion was held about what gratitude meant, and examples of things to be grateful for were proposed by the researcher and the

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children to ensure their understanding. Children in the neutral event diary condition were asked “to write down three things that you remember from your school day in a factual way, like a news reporter would record details about the news.” Examples were also shared by the researcher and the children to check their understanding (see Appendix K for example pages from the diary).

Those in the sharing conditions were also asked to select up to three items from their diary at the end of each week, which were either their favourite (for those in the gratitude diary condition) or their most important learning moments (for those in the neutral event condition). To mark which entries they had chosen, they were asked to colour in a smiley face next to the entry. They were told some of these highlighted entries would be shared with the researcher at the end of the intervention. Those in the non-sharing conditions were asked to colour in up to 3 smiley faces hidden in the border of each page. This was done to ensure all participants completed a similar task at the end of each week to reduce the chance of children becoming unblind to the different groups. Diaries were handed out to the children in this introductory session. The children were reminded that if they forgot what they needed to do, the instructions were on the first page. They were told that if they were still unsure what they needed to do, they should check with their teacher rather than asking a peer. Children were asked to do their diaries privately and not to talk to others about what they had written.

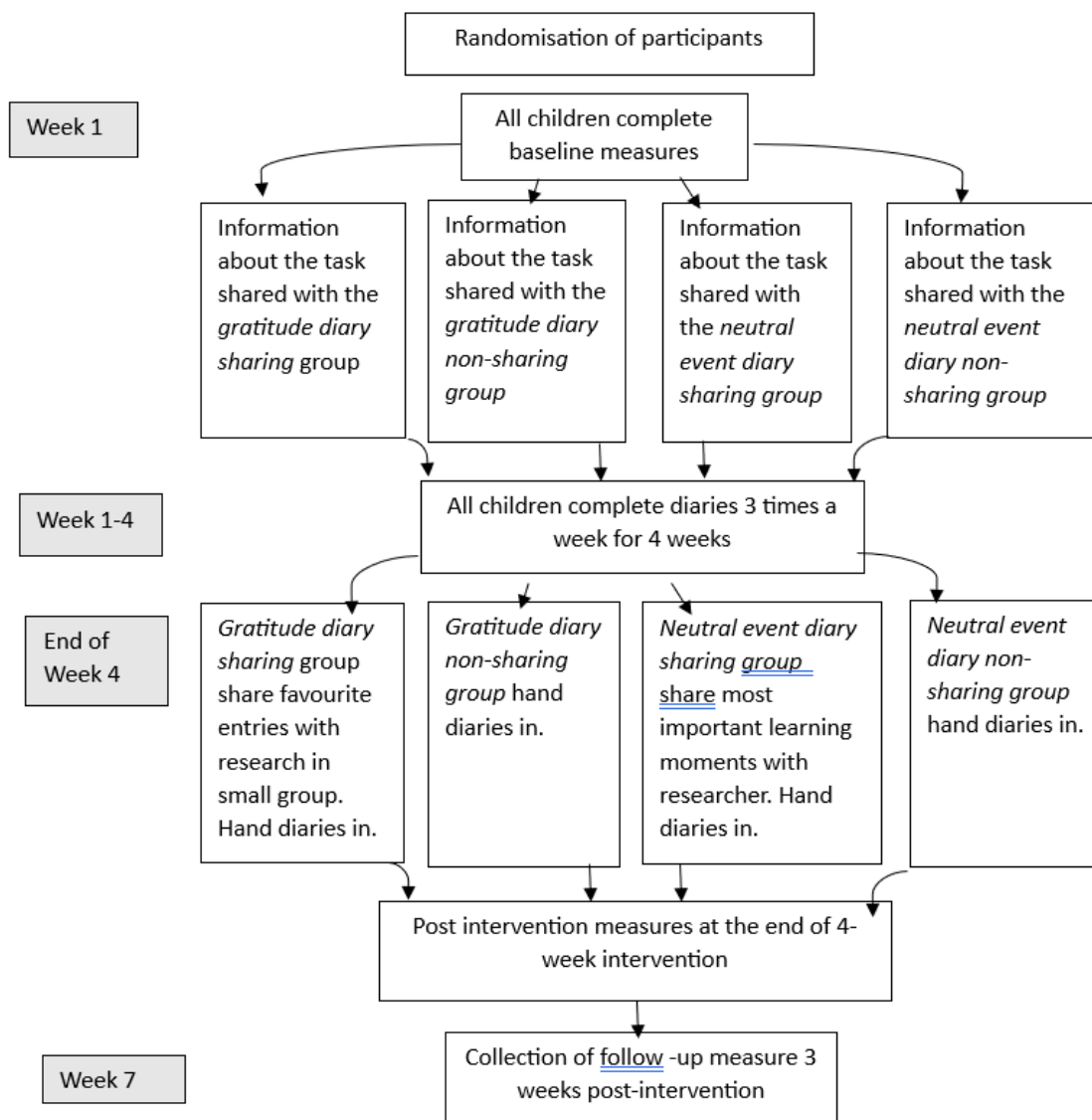
Following the introductory session, the children began their intervention. They were given 10 minutes, three times a week, to complete their diary during the school day. Teachers asked them to complete their diaries towards the end of the day to ensure they had things to write about. This took place over four weeks. Teachers were told that for those who may find writing challenging, they could be supported in their typical way. For example, their teacher could scribe for them, or they could draw the thing they were grateful for.

At the end of the intervention, children were sent in their groups (gratitude sharing, gratitude non-sharing, neutral events sharing, and neutral events non-sharing), one class at a time, to the researcher. Those in the sharing condition were invited to share some of the previously selected items with the researcher. The researcher aimed to give a consistent, enthusiastic and supportive response to each child to ensure consistency of response across participants. Those in the non-sharing condition handed their diaries to the researcher and were thanked for finishing them. Following this, the three measures were completed by the children in the same way they were completed pre-intervention. After three weeks, the researcher

returned to repeat the measures one last time as a follow-up. At this point, a debrief was given to the children. See Figure 2 for the process in its entirety. School one completed their intervention in the first half of the autumn term 2024, with follow-up occurring after the half-term break. The second group completed theirs in the second half of the autumn term 2024, with their follow-up occurring after the Christmas holidays.

Figure 2

Visual Model of the Procedure and Intervention



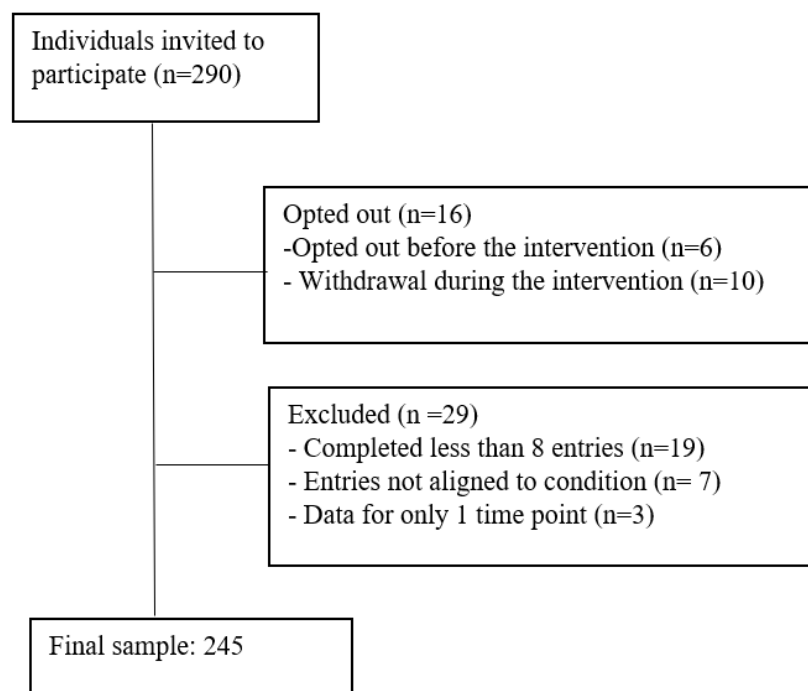
3.3.4 Analytic Approach

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Following the collection of diaries, a manipulation check was completed to check for adherence to the intervention. Firstly, every diary was reviewed to see whether there was a minimum of eight entries. Participants were excluded if they had not completed this number. The last two pages of every diary were also checked to determine if the entries made reflected the condition the student was in, i.e., something to be grateful for, or a fact that had happened that day. If it was unclear, a more thorough check of the rest of the diary entries was carried out. No children drew their entries for their diaries, and in six diaries, it was noticeable that teachers had scribed for them. Participants were also removed if they had only completed the measures at one time point. As a result of this check, 45 participants were excluded from the analysis (See Figure 3).

Figure 3

Breakdown of Excluded Participants.



3.3.5 Power Calculation

An a priori power analysis was conducted using G*Power3 (Faul et al., 2007) for sample size estimation. It was based on data from Lambert et al. (2012), which compared three groups: those who shared gratitude, those who shared neutral events and those who did a gratitude

intervention but did not share. The effect size for positive affect in this study was 0.38, which is considered small, using Cohen's (1988) criteria. Using a significance criterion of $\alpha = .05$ and power = .80, the minimum sample size needed with this effect size is $n = 200$ for a $2 \times 2 \times 3$ mixed design ANCOVA. Therefore, the obtained sample size of $n = 245$ was deemed suitable to test the study hypotheses.

3.4 Results

Data analysis was conducted using the IBM Statistical Package for Social Sciences (SPSS) 27. Preliminary analyses were conducted to check the data for missing data, outliers, and that the assumptions of homogeneity and normality were met. An inspection of the histograms and Q-Q Plots indicated that the assumption of normality was met. Box plots suggested no significant outliers and therefore no methods of correction were needed. Homogeneity was tested for each variable using Levene's test for equality of variances. This was not found to be violated with all variables not being significant ($p > .05$). As the preliminary analysis revealed no evidence that parametric assumptions were not met, parametric tests were used.

Baseline scores for sense of school belonging and positive affect confirmed no significant differences across the four groups. However, baseline scores for gratitude and negative affect were significantly different $F(3, 244) = 2.71, p = .046$, and $F(3, 244) = 3.34, p = .020$. As there were statistical differences in negative affect and gratitude baseline scores, an ANCOVA model was considered to adjust for these preexisting differences between the groups. For an ANCOVA, further assumptions needed to be reviewed: the covariates should be linearly related to each of the dependent variables, and there should be homogeneity of regression slopes. Looking at the scatter plots for each outcome measure (SoSB, positive affect and negative affect), baseline gratitude scores appeared to be linearly related to each outcome, with no clear deviation from linearity noted. A similar finding was revealed using negative affect as the covariate. The regression lines on each scatterplot were nearly parallel, suggesting that the data met the assumption of homogeneity of regression slopes.

Descriptive statistics of means and standard deviations were explored first, see Table 6 for means and the adjusted means based on covariates.

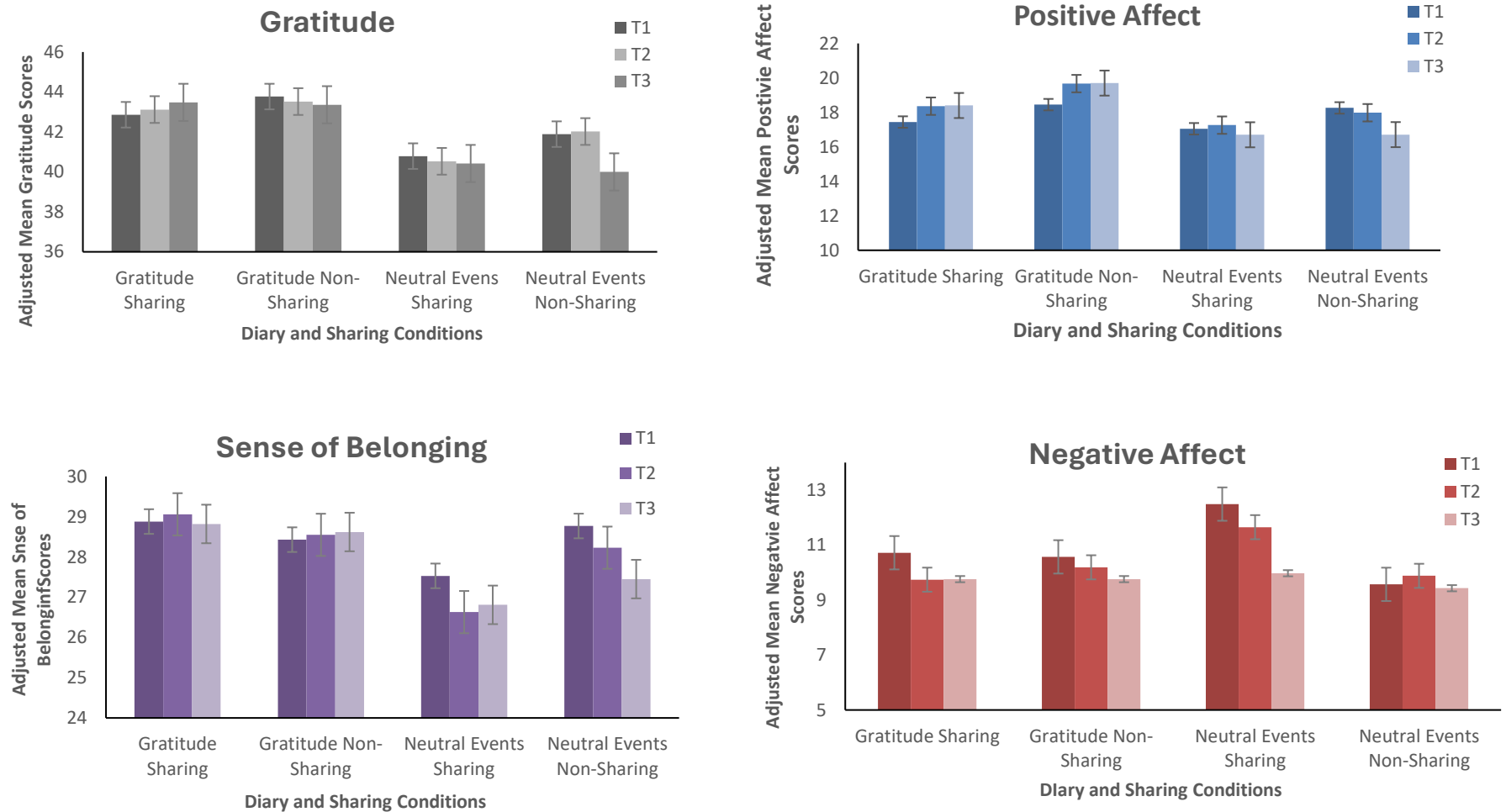
Table 6

Group Means and Adjusted Means for Gratitude, Belonging, Positive Affect and Negative Affect at Each Time Point.

Time	Measure	Gratitude Condition				Neutral Events Condition			
		Sharing		Non-Sharing		Sharing		Non-Sharing	
		M (SD)	M _{adj} (SE)	M (SD)	M _{adj} (SE)	M (SD)	M _{adj} (SE)	M (SD)	M _{adj} (SE)
Baseline (T1) (n=245)	Gratitude	42.86 (6.01)	42.84 (0.80)	43.77 (5.09)	43.65 (0.78)	40.79 (5.47)	41.29 (0.88)	41.89 (6.50)	41.52 (0.86)
	Belonging	28.88 (4.72)	28.73 (0.59)	28.43 (5.03)	27.97 (0.57)	27.53 (4.89)	28.65(0.65)	28.77 (4.83)	28.40 (0.63)
	Positive Affect	17.44 (4.75)	17.28 (0.58)	18.45 (4.65)	17.93 (0.56)	17.05 (4.71)	18.11 (0.63)	18.26 (5.15)	18.03 (0.64)
	Negative Affect	10.72 (4.31)	10.78 (0.61)	10.57 (4.48)	10.78 (0.60)	12.49 (4.76)	12.01 (.07)	9.57 (4.09)	9.60 (0.67)
Post- Intervention (T2) (n=204)	Gratitude	43.12 (7.29)	43.10 (1.07)	43.52 (7.91)	43.41 (1.05)	40.53 (7.89)	41.20 (1.17)	42.02 (7.77)	41.53 (1.15)
	Belonging	29.06 (4.31)	28.92 (0.63)	28.55 (4.97)	28.12 (0.61)	26.63 (5.35)	27.59 (0.69)	28.23 (5.20)	27.96 (0.68)
	Positive Affect	18.36 (5.04)	18.21 (0.68)	19.67 (5.16)	19.18 (0.67)	17.26 (5.60)	18.21 (0.75)	17.98 (5.63)	17.81 (0.75)
	Negative Affect	9.74 (4.41)	9.78 (0.65)	10.19 (4.90)	10.32 (0.64)	11.65 (5.04)	11.12 (0.71)	9.88 (4.12)	9.84 (8.19)
Follow-up (T3) (n = 223)	Gratitude	43.48 (6.91)	43.18 (1.04)	43.36 (7.29)	43.87 (1.02)	40.42 (7.22)	40.87 (1.14)	40.00 (8.09)	39.67 (1.12)
	Belonging	28.82 (4.52)	28.69 (0.69)	28.62 (4.98)	28.21 (0.68)	26.81 (5.81)	27.57 (0.76)	27.45 (5.81)	27.37 (0.75)
	Positive Affect	18.40 (5.07)	18.28 (0.71)	19.70 (4.93)	19.28 (0.69)	16.70 (5.07)	17.27 (0.78)	16.71 (6.08)	16.80 (0.78)
	Negative Affect	9.76 (4.42)	9.80 (0.63)	9.76 (4.26)	9.82 (0.61)	9.975 (4.33)	9.91 (0.68)	9.43 (4.37)	9.39 (0.66)

Figure 4

Graphs Showing Adjusted Group Means for Gratitude, Belonging, Positive Affect and Negative Affect at each Time Point



3.4.1 Intervention Effects

To investigate the first research aim a 2 (diary condition: gratitude, neutral event) x 2 (sharing condition: sharing, non-sharing) x 3 (time: T1, T2, T3) mixed design ANCOVA was used for each of the three measures with gratitude and negative affect baseline scores as covariates.

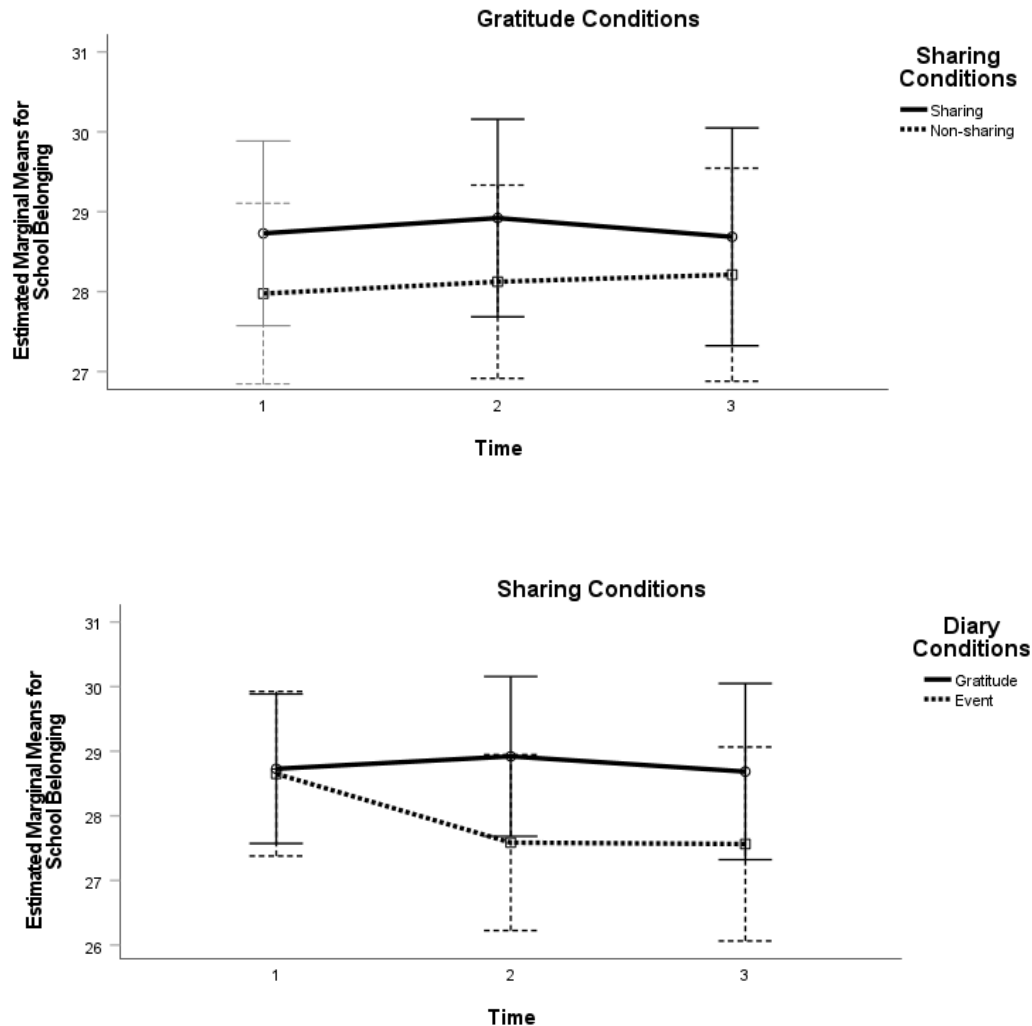
3.4.1.1 Sense of Belonging.

Mauchly's test indicated that the assumption of sphericity had not been violated, $\chi^2(2) = 5.732, p = .057$. No significant two-way interaction for time and diary $F(2,368) = 2.32, p = .099$ was found, indicating no significant difference in sense of belonging between those who had completed a neutral event diary or a gratitude diary when pre-test gratitude and negative affect scores were controlled for. Therefore, our first hypothesis was not supported. There were also no significant main effects of diary $F(2,368) = 0.13, p = .879$, time, $F(2,368) = 0.83, p = .436$ and sharing $F(1,184) = 0.37, p = .545$ and for other two-way interactions, time and sharing $F(2, 368) = 1.29, p = .879$ and diary and sharing $F(1,184) = 0.32, p = .575$.

Considering the second hypothesis, the three-way interaction effect was explored. No significant effect was found, $F(2,368) = 0.34, p = .716$, suggesting that there was no significant difference between sense of belonging scores between the gratitude groups when pre-test gratitude and negative affect scores were controlled for. The graph comparing the two conditions reveals that scores for sense of belonging remained relatively stable across all time points for both groups (see Figure 5). The non-significant result also suggests no differences between the gratitude sharing condition and the neutral events sharing condition. Although the gratitude sharing group had relatively stable scores compared to the neutral event sharing, which dipped slightly, this was not found to be significant (see Figure 5). Therefore, the second hypothesis was not confirmed.

Figure 5

Graphs Showing Three-way Interaction for Sense of Belonging. Graph 1 Shows Gratitude Sharing Vs Gratitude Non-Sharing. Graph 2 Shows Gratitude Sharing Vs Neutral Event Sharing.



3.4.1.2 Positive Affect

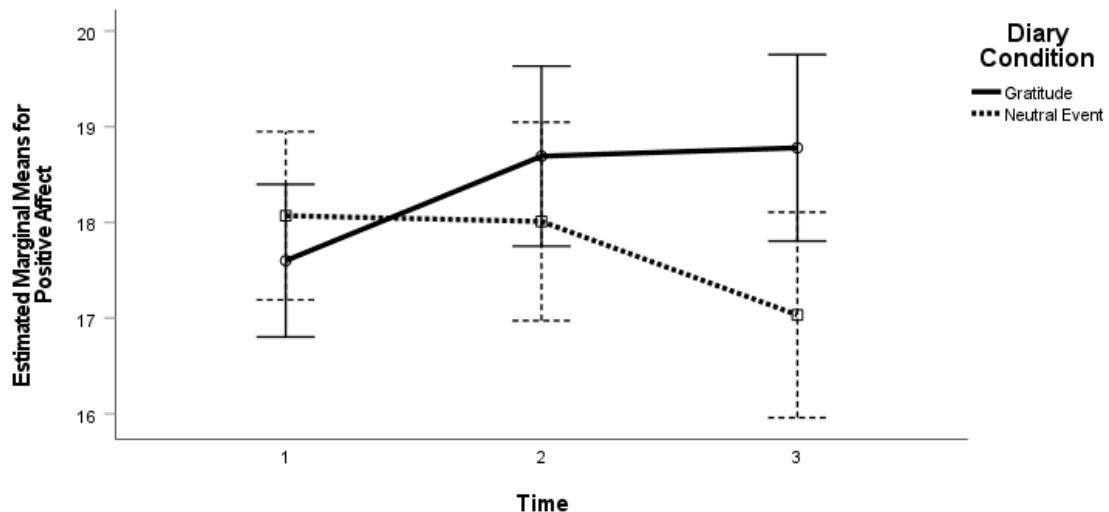
Mauchly's test indicated that the assumption of sphericity had been violated, $\chi^2(2) = 7.891, p = .019$, and therefore degrees of freedom were corrected using Greenhouse-Geisser. In support of hypothesis 1, a significant interaction effect was found for time and diary condition $F(1.92, 349.11) = 4.77, p = .010, \eta_p^2 = .026$, when pre-test gratitude and negative affect scores were controlled for. Figure 6 suggests these were due to positive affect increasing in the gratitude condition, but not for those completing neutral event diaries. The partial eta squared indicated a small effect size. No significant main effects were found for diary $F(1, 182) = 1.40, p$

= .238, sharing $F(1, 182) = 0.26, p = .613$, time $F(1.92, 349.11) = 1.75, p = .839$; or any of the other two-way interactions time and sharing: $F(1.92, 349.11) = 0.01, p = .989$; diary and sharing $F(1, 182) = 1.18, p = .278$).

Looking at the interaction effect of time or diary (see Figure 6), positive affect increased for those in the gratitude conditions between baseline and post-intervention. This increase remained stable between post-intervention and follow-up. In comparison, those in the neutral event conditions experienced a slight decrease in their positive affect between baseline and post-intervention, and a greater decrease at follow-up. This confirms the first hypothesis that a gratitude diary will have a positive impact on mood relative to completing a neutral event diary.

Figure 6

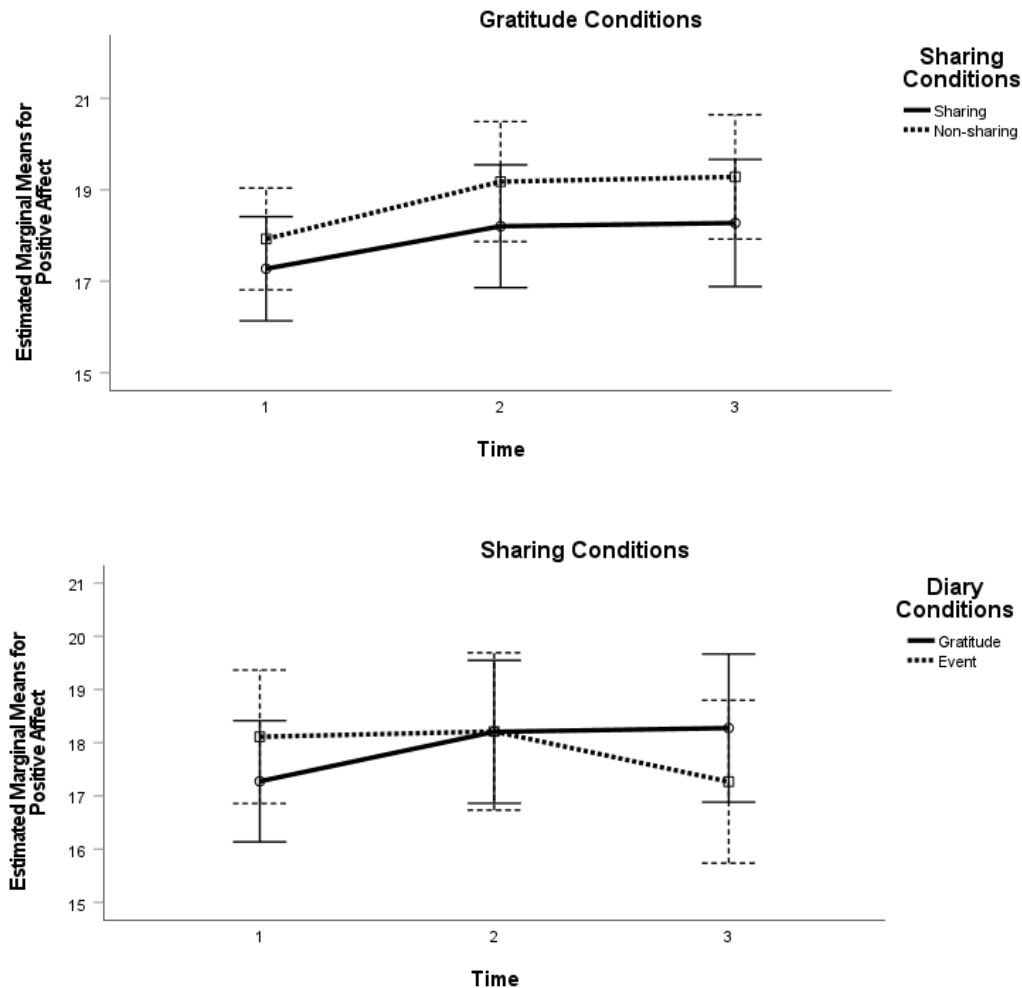
Graph Showing Two-way Interaction of Diary Condition and Time



To explore the second hypothesis a three-way interaction between gratitude, time and sharing was examined. This revealed a non-significant interaction, $F(1.92, 349.11) = 0.16, p = .845$, indicating that there was no significant difference between positive affect scores in the gratitude groups. In both gratitude conditions, positive affect scores appear to increase post-intervention and remain stable for follow-up (see Figure 7). The non-significant result also suggests no differences between the gratitude sharing condition and the neutral events sharing condition. Although the gratitude sharing group saw an overall slight increase in positive affect compared to the neutral event sharing, which saw a decrease (particularly at follow-up), this was not found to be significant (see Figure 7). Therefore, the second hypothesis was not confirmed.

Figure 7

Graphs Showing Three-way Interaction for Positive Affect. Graph 1 Shows Gratitude Sharing Vs Gratitude Non-Sharing. Graph 2 Shows Gratitude Sharing Vs Neutral Event Sharing.



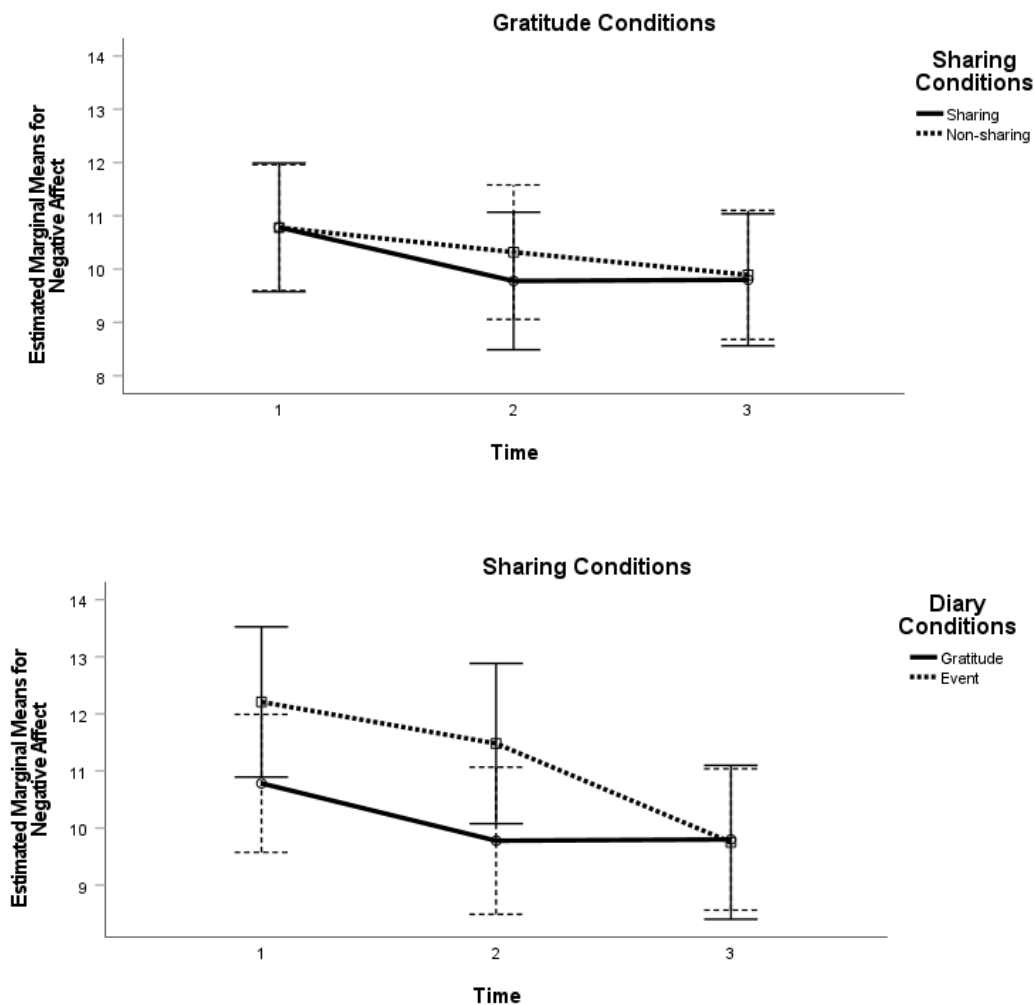
3.4.1.3 Negative Affect

Mauchly's test indicated that the assumption of sphericity had not been violated, $\chi^2(2) = 3.792, p = .150$. Considering our first hypothesis, no significant two-way interaction effects were found for time and diary condition $F(2, 366) = 0.87, p = .419$, indicating no significant differences in negative affect between those who had completed a neutral event diary or a gratitude diary when covariates were controlled for. No significant main effects were found for time $F(2, 366) = 1.24, p = .291$, sharing $F(1, 183) = 1.64, p = .202$ or diary $F(1, 183) = 0.67, p = .797$ and no significant two-way interaction effects were found for time and sharing $F(2, 366) = 1.69, p = .185$ and diary and sharing $F(1, 183) = 2.84, p = .094$.

Considering the second hypothesis, the three-way interaction between time, sharing and diary condition was explored. No significant effect was found, $F(2, 366) = 1.54, p = .216$, suggesting that there was no significant difference between negative affect scores in the gratitude groups when pre-test gratitude scores were controlled for. The graph comparing the gratitude conditions reveals that both groups saw a similar decrease in negative affect scores (See Figure 8). No difference was also found between the gratitude sharing condition and the neutral events sharing condition. Whilst the graph shows a seemingly steeper decline in negative affect for the neutral events sharing group, it wasn't deemed significantly different (see Figure 8). Therefore, the second hypothesis was not confirmed.

Figure 8

Graphs Showing Three-way Interaction for Negative Affect. Graph 1 Shows Gratitude Sharing Vs Gratitude Non-Sharing. Graph 2 Shows Gratitude Sharing Vs Neutral Event Sharing

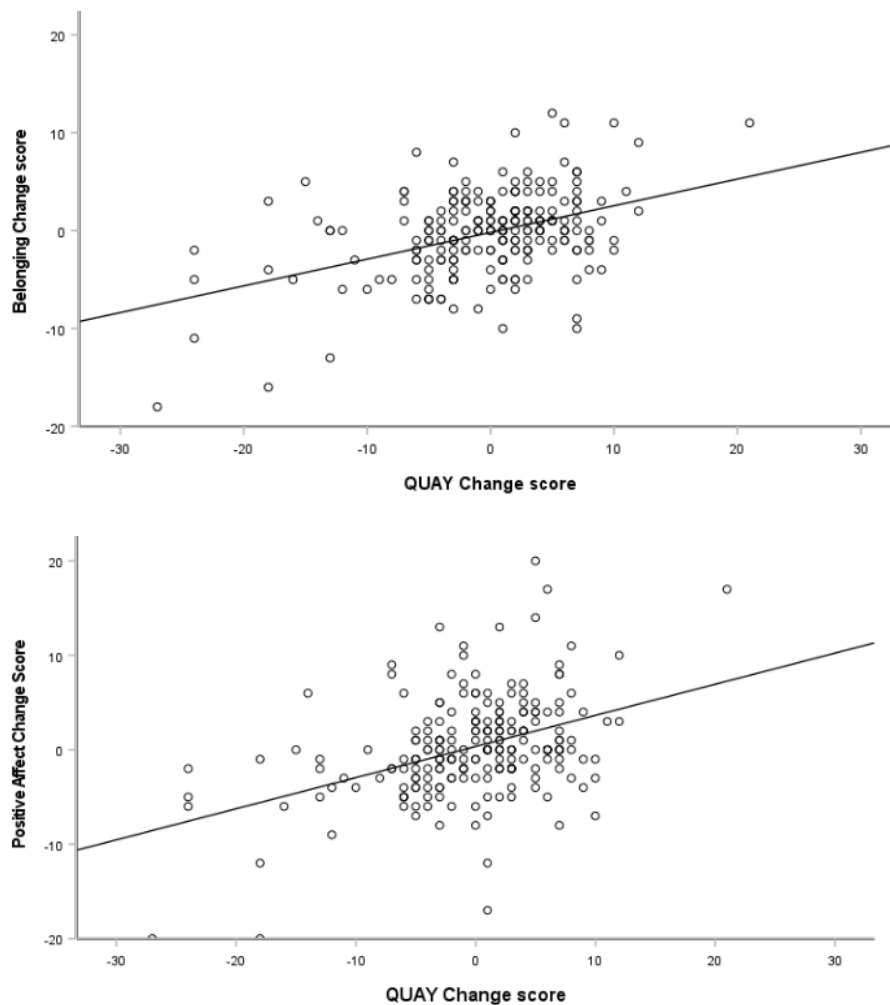


3.4.2 Relationship Between Increase in Gratitude and Sense of Belonging, Positive Affect and Negative Affect

Bivariate Pearson's correlations were conducted to investigate if an increase in gratitude across the timepoints would lead to an increase in sense of school belonging and positive affect, and a decrease in negative affect. Change scores for each measure were calculated, showing the difference between T1 and T3 scores. Results demonstrated a significant positive correlation between QUAY change scores and sense of belonging change scores $r = .424, p = <.001$, indicating that as children's gratitude increased, so did their sense of belonging (Figure 9). A significant positive correlation was also found for QUAY change scores and positive affect change scores $r = .415, p = <.001$, demonstrating that an increase in gratitude was related to an increase in positive affect (Figure 9). A non-significant correlation was found for negative affect change scores and QUAY change scores $r = -.101, p = <.136$.

Figure 9

Correlations Between QUAY Change Scores and Sense of Belonging and Positive Affect

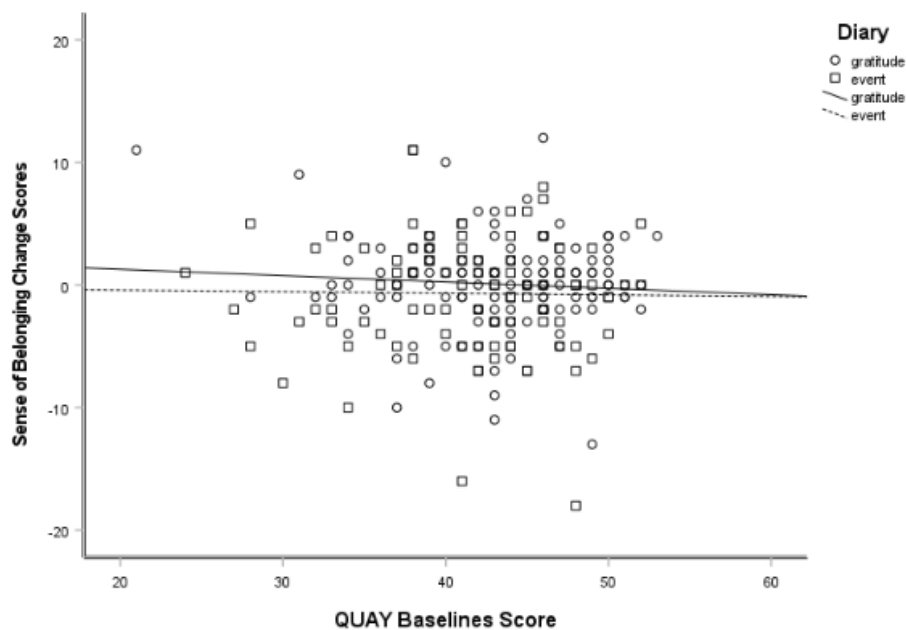


3.4.3 Impact of Low Gratitude at Baseline on Sense of Belonging, Positive Affect and Negative Affect

To investigate the final research aim to determine if gratitude diary interventions are more effective on children who started with lower gratitude, a moderation analysis was carried out using PROCESS v.3.5, model 1 (Hayes, 2018). For sense of belonging, the relationship between children's initial gratitude score and the change in their sense of belonging was not moderated by the type of intervention $R^2 = .01$, $F(3, 217) = 0.79$, $p = .500$. Although the result was not significant, the graph does show a slight pattern that those with lower gratitude scores at baseline have a higher change in sense of belonging when they were in the gratitude condition (see Figure 10).

Figure 10

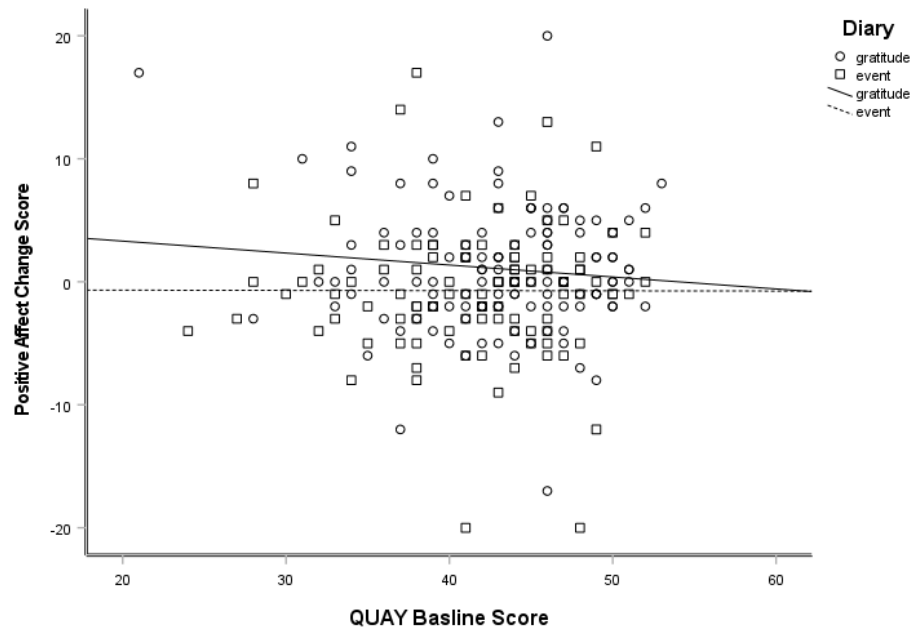
Graph Showing the Relationship Between Gratitude Baseline Scores and Sense of Belonging Change Scores for the Gratitude and Neutral Event Condition.



The same analysis was conducted for positive affect. This showed the relationship between children's initial gratitude score and the change in their positive affect was not moderated by the type of intervention $R^2 = .034$, $F(3, 217) = 2.54$, $p = .058$. Although not significant, for participants in the gratitude conditions, the graph does show a trend for those with lower gratitude scores at baseline to have a higher change in positive affect (Figure 11).

Figure 11

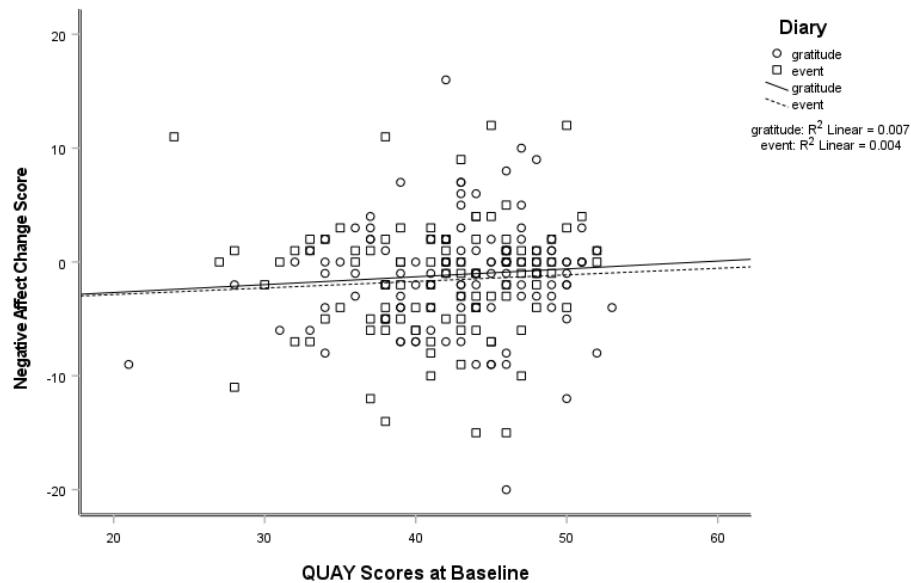
Graph Showing the Relationship Between Gratitude Baseline Scores and Positive Affect Change Scores for the Gratitude and Neutral Event Condition.



The same analysis was conducted for negative affect. This showed the relationship between children's initial gratitude score and the change in their positive affect was not moderated by the type of intervention $R^2 = .009$, $F(3, 217) = 0.62$, $p = .603$, suggesting those with lower gratitude scores at baselines did not have lower negative affect after a gratitude intervention, relative to the neutral event intervention. Overall, these results did not confirm our third hypothesis that gratitude diary interventions are more effective on children who started with lower gratitude.

Figure 12

Graph Showing the Relationship Between Gratitude Baseline Scores and Negative Affect Change Scores for the Gratitude and Neutral Event Condition.



3.5 Discussion

The current study explored the effects of gratitude diaries on sense of school belonging and mood, particularly understanding the potential impact of sharing gratitude with another. A secondary aim of this thesis was to explore the implications of dispositional gratitude on the effectiveness of gratitude interventions with children.

Concerning the first research question, the first hypothesis was partially supported as children who completed a gratitude diary showed small increases in positive affect, which was not seen in children who completed the neutral events diary. However, there was no evidence that the gratitude diaries affected SOSB or negative affect. The results also did not support the second hypothesis, as sharing selected gratitude entries did not appear to have uniquely different benefits than completing a gratitude diary alone or sharing neutral events. Despite not finding intervention effects for sense of school belonging, gratitude was found to be positively associated with SOSB and positive affect. It was, however, not found to be associated with negative affect.

Concerning the third research question, the results did not confirm our hypothesis for all outcomes. Despite the graphs appearing to indicate a pattern that suggested those with lower

gratitude scores at baseline had a higher change in positive affect and SOSB when they were in the gratitude condition, these results were not significant. Therefore, it is hard to conclude whether gratitude diaries might be more impactful as a targeted intervention for those with lower gratitude or as a universal intervention.

The intervention effect of the gratitude conditions on positive affect is reflective of previous research (Renshaw & Olinger Steeves, 2016). Khanna and Singh (2016) found intervention effects on psychological well-being, positive affect and positive feelings. Similar effects on positive affect were also found for a gratitude intervention group relative to a control group among Chinese middle school students (Shi & Zhu, 2008). Studies by Froh et al. (2009) and Froh et al. (2014) also reported positive associations between gratitude and positive affect. Two of these studies similarly found no association or intervention effects for gratitude and negative affect (Froh et al., 2009; Khanna & Singh, 2016). This was also reported to be the findings of a recent systematic review, which concluded there were small effect sizes for an increase in positive affect, but not for negative affect (Obeldobel & Kerns, 2021). It has been suggested that these results may be explained by understanding that flourishing and pathology are two distinct constructs (Keyes, 2007). Therefore, it may be that gratitude diaries, which are positioned as a positive psychology intervention, may enhance flourishing without concurrently reducing negative affect. While there may be something to this argument, there are other studies with children that have found an impact on negative affect (Bono et al., 2020; Froh et al., 2014). Another explanation for these results may be that the children all started with relatively low negative affect to begin with. The mean baseline score for gratitude groups was close to the minimum score possible for negative affect. Therefore, whilst there was a decrease in negative affect in the gratitude conditions, there could have been a possible ceiling effect on the ability for the scores to decrease any further.

A significant positive correlation between gratitude and sense of school belonging may demonstrate the benefits of increasing children's gratitude on social outcomes. It is concurrent with other studies that have similarly found associations between gratitude and positive relationships, relationship satisfaction and social support (Caleon et al., 2017). However, our results differ from studies with children that have found intervention effects of gratitude on social outcomes such as sense of school belonging (Diebel et al., 2016), school satisfaction (Froh et al., 2009) and friendship satisfaction (Bono et al., 2020). As with negative affect, a possible reason for not finding a significant intervention effect for both gratitude conditions may be due to a high mean score for sense of school belonging at

baseline. It once again suggests there may be a possible ceiling effect for those in gratitude conditions.

The second research aim was to understand if sharing gratitude led to enhanced emotional and social benefits, in the hope that this would allow a better understanding of what components of a gratitude intervention make it most efficacious. The findings suggest there was no unique difference for the gratitude sharing group. These results prompted wonderings related to several factors: the recipient of the gratitude expression, how the recipient is chosen, and the frequency of gratitude sharing. Concerning the first, there is a question around whether it would have been more beneficial for children to share their gratitude with a member of school staff or a peer, particularly for the social outcome of sense of school belonging. As discussed, enthusiastic and supportive responses from the recipient can lead to an increase in social outcomes, such as relationship satisfaction (with that person) and pro-social emotions such as trust (Gable & Reis, 2010). In Walsh's (2023) study, they found that those who shared gratitude in a one-to-one context had higher feelings of connectedness and support than those who shared their gratitude publicly. Therefore, it may be that in sharing it with someone from the school context, these feelings towards school may have been able to be elicited further. Indeed, studies that have included an element of sharing and found positive effects on emotional and social outcomes in children, allowed for sharing with people within the school context (Bono et al., 2020; Caleon et al., 2017). Although in both studies there were other components to the gratitude intervention, and therefore the results cannot be seen as a direct result of sharing alone, it still raises the question of whether benefits would be more apparent if gratitude were expressed to someone within the school environment.

Considering the second factor, Dixit and Singh (2024) found a significant increase in joviality and reductions in negative affect when participants shared their gratitude with a person of their choice. These results were not found when the participants had restrictions placed on who they could share their gratitude with. Similarly, in Lambert and colleagues' (2012) study, students were asked to share with a partner or someone close to them, once again allowing them choice. Therefore, not allowing for choice in who they shared their gratitude with may have impacted our outcome measures.

A final point is on the frequency of gratitude expression. In this study, although the children were asked to select the entries they wanted to share at the end of each week, they only shared directly with the researcher on one occasion. In contrast, Lambert and colleagues' (2012) intervention allowed for weekly sharing with their partner. Similarly,

Walsh et al. (2023) asked participants to express their gratitude four times over a week. Participants experienced improvements in state gratitude, positive emotions, negative emotions, elevation, connectedness, support, and loneliness, relative to the control group. Therefore, more frequent sharing might have led to a greater impact on outcome measures.

These three factors highlight that it may not yet be clear by what mechanism sharing gratitude is beneficial to well-being. It could be that in seeking out others when good things happen (Gable et al., 2004; Langston, 1994), it allows for the reappraisal of the positive experience of an event. Therefore, linked to the previous paragraph, creating opportunities for frequent reappraisal during gratitude interventions would be important. In this study, although children didn't share weekly, encouraging reappraisal was demonstrated by asking children to select their favourite or most important entries at the end of the week. Unfortunately, when looking through the diaries, many of the children forgot to do this. Therefore, they likely only had the opportunity for reappraisal at the second time point when sharing with the researcher.

Another mechanism that leads to the benefits of sharing could be that the action of engaging in a pleasant interaction with a partner is responsible for increases in positive mood. For example, Vittengl and Holt (1998) suggest that positive forms of social interaction, specifically fun and informational, are associated with increases in positive emotions. As mentioned, in Walsh et al.'s (2022) study, whilst they found increased positive affect and elevation when sharing gratitude with a parent, they also found this to be the case if students engaged in a social interaction of any kind with parents, whether it was sharing gratitude or their neutral experiences of college (Walsh, 2022). Therefore, perhaps our results are more indicative of these findings, as such, sharing gratitude was not uniquely different to sharing neutral information. As questions remain, more research would be useful in further understanding the mechanisms by which sharing gratitude could be uniquely different to sharing in a neutral capacity.

Potentially, the marginal results found for the first research aim are also indicative of a broader notion around motivation and creating authentic gratitude. For gratitude interventions to have an impact, the gratitude must be freely given, authentic and not considered tokenistic (Renshaw & Hindman, 2011). The significant positive correlation between gratitude and its impact upon sense of school belonging and positive affect highlights the benefits of fostering gratitude. In this study, it may be that the intervention itself was not able to foster gratitude in an authentic way for all children. Some children may have difficulty with writing, perceive writing as a 'work' (Khanna & Singh, 2019) or find the idea of sharing, particularly with a relative stranger,

uncomfortable (Sheldon & Lyubomirsky, 2004). In future, it may be important to ensure that interventions are tailored to the motivations of the individual. Following Sheldon and Lyubomirsky's (2004) model of well-being change, sustainable increases in happiness can occur only when a motivated person is willing to persist and is paired with an effective activity.

Our third research aim was to understand whether gratitude interventions would be more beneficial as a targeted intervention or used universally by exploring if there were differences between those with lower gratitude compared to higher gratitude pre-intervention. Ultimately, our results did not support our hypothesis and are not reflective of Rash et al.'s (2011) findings. However, looking at the baseline scores for gratitude, they were not particularly low, and the participants who were far away from the mean were few. Based on these results, it is hard to determine whether this intervention would be more effective as a targeted intervention for those with low gratitude, compared to a more universal intervention.

3.5.1 Limitations

A strength of this piece of research is the diversity of its sample, with one of the schools having nearly 80% of the students with English as an additional language. However, without consent to store and analyse personal data such as ethnicity, it was not possible to explore the data to see if there were any cultural differences. Previous studies have suggested there may be cultural differences in the effects of expressing gratitude between individualistic and collectivist cultures. Collectivistic cultures value interdependence and belonging and are more likely to define themselves relative to others (Markus & Kitayama, 1991). It is thought that in collectivist cultures, implementing socially or relationally oriented psychological interventions may not always lead to gains in well-being (Datu et al., 2022). This is thought to be reflective of collectivist cultures holding an interdependent view, compared to having an independent self-view in individualistic cultures (Markus & Kitayama, 1991). Indeed, cross-cultural variation in the benefits of gratitude has been found among America, Taiwan and India (Shin et al., 2020). Similarly, it has been suggested that people from collectivist cultures tend to report lower positive affect than those from individualistic cultures (Hartanto et al., 2022). Exploring whether such cultural differences existed in our sample could have been valuable.

A second limitation is whether there could have been steps to check how children viewed the gratitude diaries, and more consideration given to how to prevent or address any unintended consequences. It may have been helpful to collect information throughout the intervention on how children were finding the gratitude diary, i.e. whether they enjoyed the task

or whether it became perfunctory or tokenistic. In collecting qualitative data from the students, Khanna and Singh (2019) were able to ascertain that the children likely associated gratitude writing with work, which was not intrinsically pleasurable to them. They felt this likely explained the non-significant results they had found. Linked to this is also considering whether there were any unintended consequences, such as raising feelings of guilt or indebtedness. This is particularly relevant given the diverse sample. Being asked to consider who you feel grateful towards can lead to feelings of indebtedness, discomfort, embarrassment and guilt (Armenta et al., 2017). It may lead to an individual feeling obliged to repay the favour, feel guilty for not having done so immediately and feel uncomfortable for needing help in the first place (Armenta et al., 2017). Some researchers have argued that this was likely worse for those from collectivist cultures. Whilst this study was more about generalised gratitude, it was still worth considering and preparing for this in more depth. In future, it may be useful for researchers to address these possible consequences by collecting child and teacher views throughout the intervention to check whether children are happy to continue the intervention and whether levels of feelings like guilt are not rising. Teachers could also be included in determining whether there are any children who they feel are more likely to experience one of the unintended consequences mentioned, and therefore, whether they should take part in a study of this nature.

Another limitation concerns fidelity to the intervention. In particular, the possibility of variations in the amount of reappraisal children experienced, the quantity of sharing and to whom, and how they wrote in their diaries. Considering the first point, not all the children remembered to select the entries that were their favourite, or more important learning moments, at the end of the week. They were also asked to select ‘up to three’ entries each week; therefore, there was variation, even amongst those who shared on how many entries they selected. As such, the level of reflection or reappraisal may have differed across the participants. Regarding the quantity of sharing, it was planned that the children would share their entries with the researcher so that the response given could be consistent and positive across all children. This was to negate any possible impact that a particular response may have on the outcomes. For example, Lambert et al. (2012) found that the way a recipient responded to their partner amplified the boost in positive emotions when the response was enthusiastic compared to neutral. However, whilst I was able to control my responses, when taking the children out in groups, some of them started to share with others independently. Although it was useful to see their enthusiasm for sharing and potentially a good endorsement for their enjoyment of the sharing aspect, it did mean I was not fully able to control the response they received from peers. It also meant that some of the participants would have experienced sharing with me and sharing with peers, which also may have impacted the results.

Furthermore, there was no set number of entries children could share; therefore, some children may have shared more than others. Finally, there were variations in how children wrote in their diaries. For a few, teachers scribed what they wanted to write, which could be seen as a form of sharing. Additionally, of these scribed entries, there were not always 3 entries written. This meant that some children wrote more entries than others, although it should be noted that this was only the case for a very small number of children.

A final imitation related to not using an activity-matched control group. Whilst I was able to draw comparisons between the two gratitude groups and the gratitude groups and neutral control, it may have been beneficial to also include a group for children who were partaking in another form of positive psychology intervention. In this way, it would have been possible to explore whether gratitude interventions ought to be used over and above another similar intervention, such as 'kindness' or 'best possible selves', to raise subjective well-being or sense of school belonging.

3.5.2 Implications and Future Studies

The results from this study suggest several implications for schools, educational psychologists and future research. Firstly, the findings suggest fostering gratitude is associated with increases in school belonging and mood. More specifically, keeping a gratitude diary and possibly sharing their favourite entries could be used to promote a positive mood. This intervention could also be used as both a targeted intervention for children with low gratitude and as a class-wide intervention. Since they are a simple, low-cost, low-resource intervention that does not require a huge amount of time to complete, they have the potential to be a useful tool in increasing children's well-being and positive emotion. It may be useful for educational psychologists and schools to also consider the suitability of a gratitude diary and sharing entries to ensure authentic fostering of gratitude and prevent it from becoming tokenistic or unmotivating for the children involved.

Further studies could explore the various factors discussed that may be having an impact on the efficacy of sharing gratitude entries. For example, comparing interventions where children are given autonomy over who they share it with, or examining the effect of sharing with a person within the school context. It may also help to further understand if the frequency of gratitude being shared has an impact on the social and emotional aspects of well-being. Research into these areas may help to better understand the mechanism by which sharing

gratitude could have a unique effect on well-being compared to engaging in pleasant interaction.

More broadly, there is also scope to further explore who gratitude diaries are most suited to and the possible impact of motivation. It may be of value to continue the exploration of the impact of low dispositional gratitude, to better determine if they are more effective as an individual or targeted intervention. Further studies could also examine the possible impact of children's motivation to engage in a gratitude intervention, continuing to better understand how children can be engaged authentically. For example, exploring the importance of aligning an intervention with a desired goal or tailoring it to be responsive to the child's needs (Sheldon & Lyubomirsky, 2011). Linked to this is also considering whether children become more attuned to things they felt grateful for as the gratitude intervention progresses. When going through the diaries, there seemed to be an increase (for some children) in the number of entries they wrote. Speaking with school staff, they reflected that they thought the children improved in their ability to notice things they were grateful for as the intervention continued. They also noted the speed at which children were able to write in their diaries increased, suggesting an increase in fluency in this practice. This could be another interesting area to examine in further research, and to determine to what extent the increased attunement is linked to well-being.

Appendix A Appraisal of Included Studies Using the Downs and Black (1998) Checklist

Checklist Items	Study																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Hypothesis, aim, or objective clearly described?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2. Main outcomes clearly described?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3. Participant characteristics clearly described?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4. Interventions clearly described?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5. Confounders in each group clearly described?	0	0	1	0	0	1	0	0	1	1	1	1	1	1	1	0	1	0	0	0	1
6. Main findings clearly described?	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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7. Estimates of random variability provided?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8. Adverse events related to the intervention reported?	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	utd	1	0	0
9. Participants lost to follow-up reported?	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1
10. Exact probability values reported?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11. Were people asked to participate representative of the target population?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12. Were participants recruited representative?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13. Intervention delivered in a representative context?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14. Blinding of participants to the	1	1	1	utd	utd	1	1	utd	utd	utd	1	1	utd	1	utd	1	1	1	1	1	1

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intervention?

15. Blinding of research measuring outcomes?	0	1	utd	0	0	1	1	0	utd	utd	0	0	0	0	utd	0	0	0	0	0	0
16. Unplanned analyses reported?	1	utd	1	utd	utd	utd	1	0	utd	1	1	0	1	0	utd	utd	1	1	1	0	1
17. Did analyses adjust for different lengths of follow-up?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18. Were analyses appropriate?	1	1	1	1	1	1	1	1*	1	1	1	1	1	1	1	1	1	1	1	1	1
19. Reliable fidelity to intervention?	1	1	1	utd	1	1	1	1	utd	utd	1	utd	1	1	1	utd	1	utd	utd		utd
20. Valid and reliable measures?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21. Were participants in different groups recruited from the same population?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22. Were participants in different groups recruited over the same period of time?	utd	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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23. Randomisation to groups?	1	1	1	1	utd	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24. Random allocation appropriately concealed?	1	1	1	1	utd	1	1	utd	1	utd	1	1	1	1	1	1	1	1	1	utd	1
25. Adequate adjustment for confounders in the analyses?	0	1	utd	utd	0	1	0	0	1	1	1	1	0	1	0	0	1	0	0	1	1
26. Loss to follow-up taken into account?	0	1	1	1	1	1	1	0	1	1	1	1	0	1	1	0	1	1	1	utd	utd
27. Adequately powered?	utd	0	1	0	0	1	utd	0	1	utd	0	0	0	0	0	1	utd	utd	utd	utd	utd
Total score	19	23	23	19	18	25	23	16	22	21	24	22	21	23	21	20	24	21	22	18	22

Appendix B The Questionnaire of Appreciation in Youth (QUAY; Smith, 2021)

Instructions: Tick a box to say how often each sentence is true for you						
		Never	Not very often	Sometimes	Very often	Always
1	I have lots of things in my life to be thankful for					
2	Small good things can happen, even on a bad day					
3	I am so lucky compared to some other children					
4	If someone does a kind thing for me, I will do something kind back					
5	I feel happy to have the life that I have					
6	I look around and feel amazed by the things I see					
7	Other people give up their time to help me					

Appendix B

8	I think about good things that have happened to me in the past					
9	When something good is happening, I try to enjoy it as much as I can					
10	I like being thankful					
11	I feel happy if someone does a kind					

Appendix C The Belonging Scale (Frederickson & Dunsmuir, 2009)

	Read each question and try to decide how much you think it is 'true', 'not true' or you are 'not sure'	No Not True	Not sure ?	Yes True
1	I feel really happy at my school	No	?	yes
2	People here notice when I'm good at something	No	?	yes
3	It is hard for people like me to feel happy here	No	?	yes
4	Most teachers at my school like me	No	?	yes
5	Sometimes I feel as if I shouldn't be at this school	No	?	yes
6	There is an adult in school I can talk to about my problems	No	?	yes
7	People at this school are friendly to me	No	?	yes
8	Teachers here don't like people like me	No	?	yes
9	I feel very different from most other kids here	No	?	yes
10	I wish I were in a different school	No	?	yes
11	I feel happy being in my school	No	?	yes
12	Other kids here like me the way I am	No	?	yes

Appendix D Positive and Negative Affect Schedule for Children--Short Form (Ebesutani et al, 2012).

In the last week, how often have you felt:

		Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Q1	Joyful	1	2	3	4	5
Q2	Miserable	1	2	3	4	5
Q3	Cheerful	1	2	3	4	5
Q4	Mad	1	2	3	4	5
Q5	Happy	1	2	3	4	5
Q6	Afraid	1	2	3	4	5
Q7	Lively	1	2	3	4	5
Q8	Scared	1	2	3	4	5
Q9	Proud	1	2	3	4	5
Q10	Sad	1	2	3	4	5

Appendix E ERGO II Ethics application form – Psychology Committee

1. Applicant Details

1.1 Applicant name	Jessica Millington
1.2 Supervisor	Colin Woodcock, Catherine Brignell
1.3 Other researchers / collaborators (if applicable): <i>Name, address, email</i>	

2. Study Details

2.1 Title of study	The Impact of Sharing Gratitude on Children's Sense of School Belonging and Mood
2.2 Type of project (e.g. undergraduate, Masters, Doctorate, staff)	Doctorate

2.3 Briefly describe the rationale for carrying out this project and its specific aims and objectives.

Expressing gratitude has been positively associated with life satisfaction, increased positive affect, coping behaviours (Emmons & McCullough, 2003) and negatively related to anxiety, depression, and negative affect (Rash et al, 2011). It has also been linked to developing social resources by increasing altruistic tendencies, social support and prosocial behaviours such as cooperation between group members (McCullough et al, 2008; Algoe et al 2013).

Using gratitude interventions with children has also been linked to positive outcomes. For example, Diebel and colleagues, (2016) found seven- to 11-year-olds who kept a gratitude diary for four weeks experienced an increased sense of school belonging and gratitude compared to a control group keeping a neutral events diary. Concerning mood and well-being, Froh and colleagues (2008) found that young adolescents who recorded five things they were grateful for, for two weeks, had reduced negative affect and increased optimism, gratitude and school satisfaction compared to a control group who recorded

their daily hassles. Despite, the generally promising evidence for the efficacy of gratitude interventions, there are still some questions about the conditions under which they can be most effective (Dickens, 2017; Froh et al, 2009).

Research has suggested that sharing positive emotions or events can increase well-being and positive affect (Burton & King, 2004). Lambert and colleagues (2012) sought to explore whether there was indeed a causal relationship between sharing gratitude with a partner and positive mood. They found college students who completed a gratitude journal and shared entries with a partner had increased happiness, life satisfaction and vitality compared to those who did not share their journal, or those sharing neutral events. This suggests there may be benefits unique to sharing gratitude with another person as opposed to simply writing them or having a neutral interaction (Lambert et al, 2012). To the best of my knowledge, this aspect of sharing gratitude has not been explored with children. This thesis therefore seeks to explore if sharing selected entries from gratitude diaries will lead to an increased sense of school belonging and positive mood.

A secondary aim of this thesis is to look at the impact of trait gratitude on the efficacy of interventions. McCullough et al, (2004) proposed a resistance hypothesis, which posits that individuals who are predisposed to being grateful, may already view the world in a positive light such that no further positive events or experience (i.e. gratitude diary intervention) may lead to additional benefits. In line with this theory, Rash and colleagues (2011) found gratitude interventions were most effective in raising life satisfaction if participants had low dispositional gratitude compared to those who rated themselves high on gratitude. This thesis will therefore also seek to understand the implications of dispositional gratitude on the effectiveness of gratitude interventions with children.

2.4 Provide a brief outline of the basic study design. Outline what approach is being used and why.

Independent variables

- Diary condition (between subjects, 2 levels: gratitude diary or neutral event diary)
- Sharing Condition (between subjects, 2 levels: sharing or not sharing)
- Time (within subjects, 3 levels: pre- intervention, post-intervention and follow-up)

Dependent variables

- Gratitude – measured by The Questionnaire of Appreciation in Youth (QUAY: Smith, 2021)
- Belonging – measured by The Belonging Scale, (Frederickson & Dunsmuir, 2009)

- Positive and Negative Affect – measured by the Positive and Negative Affect Scale-Child Version -Short form (Ebesutani et al, 2012)

To investigate the research aim we shall use a 2 x 2 x 3 mixed model ANOVA so the effect of both the diary condition and sharing condition can be measured separately and to determine if there is an interaction effect between diary and sharing conditions.

2.5 What are the key research question(s)? Specify hypotheses if applicable.

RQ1- Does sharing gratitude diaries increase children's sense of belonging (SOB) and positive affect?

- H1: Completing a gratitude diary will have a positive impact on children's SOB and positive and negative affect relative to completing a neutral event diary.
- H2: Completing a gratitude diary and sharing selected entries from this will have a positive impact on children's SOB and positive and negative affect relative to completing a gratitude diary without sharing.
- H3: Completing a gratitude diary and sharing selected entries from this will have a positive impact on children's SOB and positive and negative affect relative to completing a neutral event diary and sharing selected entries from this.

RQ2- Are gratitude diary interventions more effective on children with lower trait gratitude

- H1: Children with lower trait gratitude who complete gratitude diaries will show a greater increase in feelings of SOB and positive affect relative to children identified with high trait gratitude

3 Sample and setting

3.1 Who are the proposed participants and where are they from (e.g. fellow students, club members)? List inclusion / exclusion criteria if applicable.

I aim to recruit around 200 pupils from Key Stage 2 (i.e. Years 3 – 6) from Primary and/or Junior schools.

3.2. How will the participants be identified and approached? Provide an indication of your sample size. If participants are under the responsibility of others (e.g., parents/carers, teachers) state if you have permission or how you will obtain permission from the third party).

I will approach schools based on our contacts in the local area and our knowledge of schools that may specifically be interested in a gratitude intervention.

An email will be sent to the gatekeepers, i.e. the headteachers of schools (see 'Gatekeeper Email'). Included in the email will be a consent form (see 'Gatekeeper Consent Form') and information for school staff and parents (see 'Parent Information Sheet' and 'Staff Information Sheet'). These documents include a brief outline of the study and an explanation of the four conditions (gratitude sharing, gratitude not-sharing, neutral events sharing, neutral events non-sharing). The parent information sheet will also contain an opt-out consent form to return to the school if they do not want their child to take part in the study.

The intention is to recruit approximately 200 participants based on a power calculation

3.3 Describe the relationship between researcher and sample. Describe any relationship e.g., teacher, friend, boss, clinician, etc.

There is a possibility that some of the schools approached will be known to me or to one of my supervisors through educational psychology work undertaken at that school (either by myself on placement in the local authority in which the school is situated or by my supervisor through their own link educational psychology work).

3.4 How will you obtain the consent of participants? (please upload a copy of the consent form if obtaining written consent) NB A separate consent form is not needed for online surveys where consent can be indicated by ticking/checking a consent box (normally at the end of the PIS). Other online study designs may still require a consent form or alternative procedure (for example, recorded verbal consent for online interviews).

Parents/ carers of the children will be provided with the appropriate participant information sheet which will explain the project and consent and opt-out consent form for parents to complete should they wish for their child to not participate in the project.

Opt-out consent will be obtained from parents of children participating, with the following rationale:

- Head Teachers will be asked to give consent for this approach.
- Diary writing will be undertaken as part of normal class activity
- No harm is anticipated to come to participants as a result of the intervention.

3.5 Is there any reason to believe participants may not be able to give full informed consent? If yes, what steps do you propose to take to safeguard their interests?

I will talk to headteachers about any concerns about the literacy levels of parents who will receive the PIS sheet and consent form.

There may be children participating who have additional needs. However, as the diaries will be a whole class activity and part of their normal day, I feel it is sufficient for teachers to approach this in the same way they would explain another learning task.

4 Research procedures, interventions and measurements

4.1 Give a brief account of the procedure as experienced by the participant. Make it clear who does what, how many times and in what order. Make clear the role of all assistants and collaborators. Make clear the total demands made on participants, including time and travel. Upload copies of questionnaires and interview schedules to ERGO.

I will visit the school and the teachers before beginning the intervention to share information about the study and the intervention itself (which will be either recording neutral events or

gratitude) three times a week over the period of the intervention (this is currently anticipated as four weeks, but might be reduced if time pressures are encountered).

Procedure as experienced by the participants:

1. A week before the intervention, participating children will complete baseline measures of the QUAY, Sense of Belonging Scale and the positive affect/negative affect S-short form during one session. This will be aided by the researcher reading the questions out loud to children.
2. Once the measures are completed, the researcher shall then provide an introduction for the children in groups according to which condition they have been placed in (gratitude sharing, gratitude not-sharing, neutral events sharing, neutral events non-sharing). The condition they are in will not be shared with the children at this point.
3. Diaries will then be handed out to the children. The diaries will reiterate the instructions given by the researcher i.e. either record up to three things they are grateful for or up to three things that have happened to them over the last few days.
4. Children will be given 10 -15 minutes, three times a week, to complete their diary during the school day (this will take place for three to four weeks). A reminder system will be set up for teachers to support the intervention taking place consistently. For example, teachers' emails will be collected by the researcher. The research will then create a 'gratitude diary' event on an online calendar (e.g. Outlook) for the duration of the intervention and invite teachers to join. Once teachers have accepted the invite, they should receive a reminder.
5. At the end of each week, children in the sharing conditions will be asked to select up to three items from their diary that week, which were either their favourite (for those in the gratitude diary condition) or their most important moments (for those in the neutral event condition). The instructions and introduction given by the researcher will inform them that they will be sharing some of these selected experiences with the researcher once the diaries are complete. For the time being, they will select their favourite three items by colouring in a smiley face next to it. At the end of each week, those in the non-sharing condition will be asked to colour in up to three smiley faces that appear in the borders of their diary.
6. At the end of the intervention, children will be sent in small groups (gratitude sharing, gratitude not-sharing, neutral events sharing, neutral events non-sharing) to the researcher. Those in the sharing condition will be invited to share a selection of the previously selected items with the researcher. Those in the non-sharing condition will be sent to the researcher to hand in their diaries and be thanked for finishing them.
7. Following this, measures shall be completed by the children in the same way they were completed pre-intervention.
8. The researcher will return 2 to 4 weeks post-intervention to repeat the measures one last time as a follow-up. The children will be given a debrief by the researcher to thank them for their participation and explain what the research was about.

4.2 Will the procedure involve deception of any sort? If yes, what is your justification?

There will not be any deception as children will be told which diary and sharing condition, they are in. An explanation about the project and the reason for there being four conditions will be explained at the end of the intervention (after the follow-up) when they receive the participant debrief information.

4.3. Detail any possible (psychological or physical) discomfort, inconvenience, or distress that participants may experience, including after the study, and what precautions will be taken to minimise these risks.

The risk to participants' psychological or physical well-being is very low, as researcher involvement should not cause any distress or discomfort.

Participation in the project may require some small changes to the pupils' school schedule e.g. time spent completing the diary, time spent completing baselines measure and time spent sharing some of their diary entries. To minimise the effects of this, researchers will work with the staff who know the pupils well to ensure they are not missing activities that are important to them, or that their participation in the project is not presenting significant inconvenience to their typical school schedule.

Completing the diaries themselves is unlikely to cause discomfort as they will either be recording things they are grateful for or neutral events. However, they may feel some discomfort due to writing and may find it onerous to write diary entries (for example, literacy skills could be a barrier to this). Therefore, the amount they have to complete will be minimal (just one line or sentence) and they can draw pictures if writing is a barrier for them.

4.4 Detail any possible (psychological or physical) discomfort, inconvenience, or distress that YOU as a researcher may experience, including after the study, and what precautions will be taken to minimise these risks. If the study involves lone working please state the risks and the procedures put in place to minimise these risks (please refer to the lone working policy).

No distress to myself is expected.

Regarding lone working, I shall share information with another member of the research team to inform them of my approximate start and finish times.

I am DBS checked and will follow the school's safeguarding policy.

4.5 Explain how you will care for any participants in 'special groups' e.g., those in a dependent relationship, are vulnerable or are lacking mental capacity), if applicable:

For completing the measures at baseline, post-intervention and follow-up, the familiar staff will remain with me to support the children as they would as part of their normal practice.

For the completion of the diary, this will be done by the teacher as part of their normal practice.

For sharing the information with the researcher, where appropriate, children will be given the option to bring a familiar adult with them when sharing their favourite diary entries.

4.6 Please give details of any payments or incentives being used to recruit participants, if applicable:

none

5. Access and storage of data

5.1 How will participant confidentiality be maintained? Confidentiality is defined as non-disclosure of research information except to another authorised person. Confidential information can be shared with those already party to it and may also be disclosed where the person providing the information provides explicit consent. Consider whether it is truly possible to maintain a participant's involvement in the study confidential, e.g. can people observe the participant taking part in the study? How will data be anonymised to ensure participants' confidentiality?

The data will be collected on paper through pre and post questionnaires, as well as the gratitude diaries themselves.

Before going to the school, printed diaries and measures will be organised into groups according to each of the four conditions. Individual ID numbers will be written on them plus a code to denote group allocation.

The researcher will create a 'look up' sheet containing children's names, their corresponding ID numbers and their corresponding group condition code. This document will be stored in two locations at school (to mitigate against accidental deletion) in locked cabinets and will not be removed from the school premises.

The names of the children on the pre-intervention questionnaires will be cut off before the researcher leaves the school with these materials. The look up sheet will be used to add the names to the diaries, and these names shall be cut off when the diaries are collected at the study's completion. The look up sheet will also be used when the post-intervention and follow-up questionnaires are completed. Once again, the names on the questionnaires will be cut off before the researcher leaves the school premises.

Following this approach should mean that all questionnaire data removed from the school is quasi-anonymised (and can only be un-anonymised through the use of the look-up sheet, which will remain at school). Although the diaries will have names removed from the front cover, their contents will not be fully anonymised since there is a possibility that other children and adults might be named there. Diaries will only be examined to check fidelity to the intervention, however, i.e. a minimum number of entries and that entries relate to the assigned condition of either neutral event or gratitude. The diaries will be stored securely in a locked cabinet and, once fidelity has been checked, will be destroyed.

If, when carrying out these checks, we find any information that causes concern about a child's well-being, this information will be passed on to the school so that they can use the look-up sheet to identify the child from the participant number and intervene as they consider appropriate.

A spreadsheet will be stored on a university laptop with ID numbers that relate to each group allocation and individual children. No identifiable information relating to the school or participants will be stored on the spreadsheet. Analysis of the data stored in the spreadsheet will be conducted using SPSS on a university laptop.

At the end of the study the look up sheets stored in schools will be securely destroyed by the researcher. At this point, all data held will be fully anonymised.

5.2 How will personal data and study results be stored securely during and after the study. Who will have access to these data?

Throughout the study, the look-up sheets identified in section 5.1 above will be stored on school premises in two secure locations (the key to these locked cabinets will be kept by a senior member of staff i.e. SENCo or Headteacher). I will only have access to this data while on the school premises.

Any data that will need to be taken off-site, such as the questionnaires, will be made anonymous before removal from the school premises (i.e. all names removed from questionnaires), following the procedure outlined in section 5.1 above. Questionnaire data will be entered onto a password-protected university computer (and, at this point, the paper copies will be destroyed).

The diaries will be stored securely in a locked cabinet and destroyed on completion of fidelity checks.

After submission of the thesis, all anonymised data will be stored in the university's research data repository, where it is accessible to other researchers. As the data will contain no identifiable information, it is deemed suitable for the data to be made available via open access without breaching any ethical, privacy or confidential requirements. The University of Southampton will keep this data for 10 years after the study has finished.

5.3 How will it be made clear to participants that they may withdraw consent to participate? Please note that anonymous data (e.g. anonymous questionnaires) cannot be withdrawn after they have been submitted. If there is a point up to which data can be withdrawn/destroyed e.g., up to interview data being transcribed please state this here.

It will be made clear to children that they are free to withdraw from the study at any point during the intervention and that if they do not want their diary or questionnaires to be included in the study, they must withdraw by the time of the final follow-up measures visit. This deadline will be identified since, after this point, once questionnaire data has been entered into SPSS and analysis started, it will not be possible to remove data without restarting analysis.

6. Additional Ethical considerations

6.1 Are there any additional ethical considerations or other information you feel may be relevant to this study?

n/a

Appendix F School Information Sheet

Date: 04.03.24

Study Title: The Impact of Sharing Gratitude on Children's Sense of School Belonging and Mood

Researcher: Jessica Millington

ERGO number:

Your school is being invited to take part in the above research study. To help you decide whether you would like to take part or not, it is important that you understand why the research is being done and what it will involve. Please read the information below carefully and ask questions if anything is not clear or you would like more information before you decide to take part in this research. If you are happy for your school to participate you will be asked to sign a consent form.

What is the research about?

My name is Jessica Millington and I am training to be an Educational Psychologist at the University of Southampton. This research project is part of my Doctorate in Educational Psychology qualification. I am interested in extending the research that has already been done in schools on the effects of using gratitude diaries to improve children's overall gratitude, sense of school belonging and mood.

Some research has shown that children who record school-based gratitude in a diary over a few weeks have higher gratitude and a greater sense of school belonging than those who complete diaries about neutral events at school.

I am interested to find out whether sharing selected entries from their gratitude diaries affects pupils', sense of belonging and mood. I am also interested to find out if the intervention is more effective for children who had lower gratitude scores to begin with, compared to children with higher gratitude scores. To investigate this, my study has four conditions:

1. Children complete a gratitude diary and share some of their favourite entries to me at the end
2. Children complete a gratitude diary and do not share their entries
3. Children complete a neutral events diary and share some of their most important moments to me at the end
4. Children complete a neutral events diary and do not share their entries

To measure gratitude before and after the study, pupils will be asked to complete The Questionnaire for Appreciation in Youth (QUAY) by Smith (2021). To measure sense of school belonging before and after the study (to see if the intervention has made a difference) pupils will be asked to complete The Belonging Scale, (Frederickson & Dunsmuir, 2009). To measure

mood, pupils will complete the Positive and Negative Affect Scale- Child Version -Short form (Ebesutani et al, 2012)

Why has my school been asked to participate?

Your school has been asked to participate because I am looking for teachers and children of junior school age (Years 3 – 6) to participate and I thought this would be an intervention that may be interesting to you. I am looking for approximately 200 children to participate in total.

What will happen to the children if they take part?

1. A week before the intervention, participating children will complete the questionnaires mentioned (QUAY, Sense of Belonging Scale and the positive affectnegative affectS-short form). This will be aided by the researcher reading the questions out loud to children.
2. Once the measures are completed, the researcher (me) shall then provide an introduction for the children in groups according to which condition they have been placed in (gratitude sharing, gratitude not-sharing, neutral events sharing, neutral events non-sharing). The existence of the other conditions will not be shared with the children at this point (i.e., they will not be told that some other children are taking part in a slightly different task to theirs).
3. Diaries will then be handed out to the children. The diaries will reiterate the instructions given by the researcher i.e., either record three things they are grateful for or three things that have happened to them this week.
4. Children will need to be given 10 minutes, three times a week, to complete their diary during the school day (this will take place over three to four weeks). A reminder system will be set up for teachers to support the intervention taking place consistently. For example, teachers' emails will be collected by the researcher. The research will then create a 'gratitude diary' event on an online calendar (e.g. outlook) for the duration of the intervention and invite teachers to join. Once teachers have accepted the invite, they should receive a reminder.
5. At the end of the final diary session each week, children in the sharing conditions will be asked to select three items from their diary that week, which were either their favourite (for those in the gratitude diary condition) or their most important moments (for those in the neutral event condition). The instructions and introduction given by the researcher will inform them that they will be sharing some of these selected experiences with the researcher once the diaries are complete.
6. At the end of the intervention, children will be sent in small groups to the researcher. Those in one of the sharing conditions will be invited to share a selection of their previously selected items with the researcher. Those in the non-sharing condition will be sent to the researcher to hand in their diaries and be thanked for finishing them.
7. Following this, measures shall be completed by the children in the same way they were completed pre-intervention.
8. The researcher will return 2 to 3 weeks post-intervention to repeat the measures one last time as a follow-up. The children will be given a debrief by the research to thank them for their participation and explain what the research was about.

Are there any benefits in my school taking part?

There are no direct benefits to your school, however, this study will help our understanding of children's gratitude. This could be helpful to schools that are considering using gratitude interventions in the future.

Are there any risks involved?

This study does not involve any risks to the children, and all tasks they complete as part of the study will not differ greatly from tasks they would usually be given as part of a typical school day.

What data will be collected?

Data will be collected in the form of questionnaires and diaries. Children will be asked to write their names on the questionnaires and diaries. Once the children's questionnaires are completed, their names will be removed and replaced with a participant number, to ensure all data is anonymous. Similarly, children's names will be removed from their diaries at the end of the intervention. No analysis will be carried out until everything has been anonymised. A sheet that links participant numbers to their names will be kept securely at the school and destroyed at the end of the study (once follow up measures are completed). A sample of the diaries will be checked to ensure that a minimum number of entries have been completed as well as to ensure that the entries match the condition that the child was assigned to. When carrying out this check, if we find any information that causes concern about a child's safety or well-being, this information will be passed on to you so that you can use the participant name/number sheet to identify the child from the participant number given to you.

Will my school's participation be confidential?

The information we collect about the children and school will be anonymised. Only members of the research team and responsible members of the University of Southampton may be given access to any confidential data collected for monitoring purposes and/or to carry out an audit of the study to ensure that the research is complying with applicable regulations. Individuals from regulatory authorities (people who check that we are carrying out the study correctly) may require access also to this data. All of these people have a duty to keep information strictly confidential). Participant numbers rather than names will be used in all the data analysis. You will be asked to keep a list of the children's names and corresponding participant numbers so that questionnaires can be coded with the correct participant number on post-intervention and follow-up measures, and so that a child's data can be removed from the study if requested by their parent/carer or if a child decides they do not want to take part (or to withdraw during the study). All paper documents (e.g., questionnaires, and completed gratitude diaries) will be stored in a locked filing cabinet and will only be accessible to the researcher. Your school's name will not be used in any aspect of the study, including the write up. Your school will be assigned a number, which will not identify you. Any electronic data, (e.g. excel spreadsheets)

will be stored on a secure, password protected laptop, and will only be accessible by the researcher and university research supervisors.

Does my school have to take part?

No, it is entirely up to you to decide whether or not to take part. If you decide you want to take part, you will need to sign and complete the attached consent form.

Consent from parents

I would like to use an 'opt-out' procedure for gaining consent from parents rather than an 'opt-in' procedure. It is important that you understand and give consent to this on the attached consent form. The rationale for using opt-out rather than opt-in consent is: first, I do not anticipate any harm to come to children as a result of participating in this study; second, the intervention itself will be undertaken as part of normal class activity; third, all data will be anonymised before being taken from the school premises. If you consent to this approach, I will send you a parent/carer information sheet about the study to send out to all parents which includes a slip to return to school if they do not want their child to take part.

What happens if I change my mind?

You have the right to change your mind and withdraw your school at any time before the end of the study without giving a reason and without your participant rights being affected. If you would like to withdraw your school, please email j.j.millington@soton.ac.uk. You can withdraw up to the last day of the study (when follow up measures have been completed).

What will happen to the results of the research?

Your school's details, as well as children's details, will remain strictly confidential. Research findings made available in any reports or publications will not include information that can directly identify your school. The results will be analysed and written up as part of the researcher's doctoral thesis project. This write-up will be available from the university's 'ePrints' website (eprints.soton.ac.uk) following its final submission; also, it might be published on the university's course blog (blog.soton.ac.uk/edpsych/) or submitted for publication in a peer-reviewed journal. The anonymised results may be made available to other researchers as part of further research. The results will be shared with you.

Where can I get more information?

If you would like more information about this study, you can contact the researcher or research supervisors by email using the details below.

Jessica Millington (Researcher): j.j.millington@soton.ac.uk

Colin Woodcock (Supervisor): c.woodcock@soton.ac.uk

Catherine Brignell (Supervisor): c.brignell@soton.ac.uk

What happens if there is a problem?

If you have a concern about any aspect of this study, you should speak to the researchers who will do their best to answer your questions. You can use the contact details provided above. If you remain unhappy or have a complaint about any aspect of this study, please contact the University of Southampton Research Integrity and Governance Manager (023 8059 5058, rgoinfo@soton.ac.uk).

Thank you for taking the time to read the information sheet and considering taking part in the research.

Data Protection Privacy Notice

The University of Southampton conducts research to the highest standards of research integrity. As a publicly-funded organisation, the University has to ensure that it is in the public interest when we use personally-identifiable information about people who have agreed to take part in research. This means that when you agree to take part in a research study, we will use information about you in the ways needed, and for the purposes specified, to conduct and complete the research project. Under data protection law, 'Personal data' means any information that relates to and is capable of identifying a living individual. The University's data protection policy governing the use of personal data by the University can be found on its website (<https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page>).

This Participant Information Sheet tells you what data will be collected for this project and whether this includes any personal data. Please ask the research team if you have any questions or are unclear what data is being collected about you.

Our privacy notice for research participants provides more information on how the University of Southampton collects and uses your personal data when you take part in one of our research projects and can be found at <http://www.southampton.ac.uk/assets/sharepoint/intranet/ls/Public/Research%20and%20Integrity%20Privacy%20Notice/Privacy%20Notice%20for%20Research%20Participants.pdf>

Any personal data we collect in this study will be used only for the purposes of carrying out our research and will be handled according to the University's policies in line with data protection law. If any personal data is used from which you can be identified directly, it will not be disclosed to anyone else without your consent unless the University of Southampton is required by law to disclose it.

Data protection law requires us to have a valid legal reason ('lawful basis') to process and use your Personal data. The lawful basis for processing personal information in this research study

is for the performance of a task carried out in the public interest. Personal data collected for research will not be used for any other purpose.

For the purposes of data protection law, the University of Southampton is the 'Data Controller' for this study, which means that we are responsible for looking after your information and using it properly. The University of Southampton will keep identifiable information about your child for 10 years after the study has finished after which time any link between you and your information will be removed.

To safeguard your rights, we will use the minimum personal data necessary to achieve our research study objectives. Your data protection rights – such as to access, change, or transfer such information - may be limited, however, in order for the research output to be reliable and accurate. The University will not do anything with your personal data that you would not reasonably expect.

If you have any questions about how your personal data is used, or wish to exercise any of your rights, please consult the University's data protection webpage (<https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page>) where you can make a request using our online form. If you need further assistance, please contact the University's Data Protection Officer (data.protection@soton.ac.uk)

After submission of the thesis, all anonymised data will be stored in the university's research data repository, where it is accessible to other researchers. As the data will contain no identifiable information, it is deemed suitable for the data to be made available via open access without breaching any ethical, privacy or confidential requirements

Appendix G Gatekeeper Consent Form

Study title: The Impact of Sharing Gratitude on Children's Sense of School Belonging and Mood

Researcher Name: Jessica Millington

Ethics/ERGO number: 92198

Version and date: V1, 04.03.24

Thank you for your interest in this study. It is very important to us to conduct our studies in line with ethics principles, and this Consent Form asks you to confirm if you agree for your school to take part in the above study. Please carefully consider the statements below and add your initials and signature only if you agree to participate in this research and understand what this will mean for you.

Please add your initials to the boxes below if you agree with the statements:

I confirm that I read the Participant Information Sheet version dated 4.3.24 explaining the study above and I understand what is expected of the children in my school	
I was given the opportunity to consider the information, ask questions about the study, and all my questions have been answered to my satisfaction.	
I agree for my school to take part in this study and understand that data collected during this research project will be used for the purpose this study.	
I understand that my participation is voluntary and that I am free to withdraw from this study at any time without giving a reason.	
As gatekeeper, I agree for correspondence regarding the study to be sent to my school email address.	
As gatekeeper I agree to the use of opt-out consent for parents who do not wish their children to take part	

Name of gatekeeper/ Headteacher (print name).....

Signature of gatekeeper/ Headteacher

Date

Appendix H Participant Information Sheet

Study Title: The Impact of Sharing Gratitude on Children's Sense of School Belonging and Mood

Researcher: Jessica Millington

ERGO number:

Your child is being invited to take part in the above research study. The headteacher of your child's school has given permission for this study to take place there. To help you decide whether you would like to take part or not, it is important that you understand why the research is being done and what it will involve. Please read the information below carefully and ask questions if anything is not clear or you would like more information before you decide to take part in this research. If you are happy for your child to participate you will not need to do anything. If you **do not** want them to take part, you will need to sign the opt-out consent form and return it to your child's school.

What is the research about?

My name is Jessica Millington and I am training to be an Educational Psychologist at the University of Southampton. This research project is part of my Doctorate in Educational Psychology qualification. I am interested in extending the research that has already been done in schools on the effects of using gratitude diaries to improve children's overall gratitude, sense of school belonging and mood. Some research has shown that children who record school-based gratitude in a diary over a few weeks have higher gratitude and a greater sense of school belonging than those who complete diaries about neutral events at school. Specifically, I am interested to find out whether *sharing* selected entries from their gratitude diaries affects pupils' sense of belonging and mood. I am also interested to find out if the intervention is more effective for children who had lower gratitude scores to begin with, compared to children with higher gratitude scores. To investigate this, my study has four conditions:

1. Children complete a gratitude diary and share some of their favourite entries to me at the end of the intervention
2. Children complete a gratitude diary and do not share their entries
3. Children complete a neutral events diary and share some of their most important moments to me at the end of the intervention
4. Children complete a neutral events diary and do not share their entries

To measure gratitude before and after the study, pupils will be asked to complete The Questionnaire for Appreciation in Youth (QUAY) by Smith (2021). To measure sense of school belonging before and after the study (to see if the intervention has made a difference) pupils will be asked to complete The Belonging Scale, (Frederickson & Dunsmuir, 2009). To measure mood, pupils will complete the Positive and Negative Affect Scale- Child Version -Short form (Ebesutani et al, 2012)

Why has my child been asked to participate

Your child has been asked to participate because they are in years 3, 4, 5 or 6.

What will happen to my child if they take part?

1. A week before the intervention, participating children will complete the questionnaires mentioned (QUAY, Sense of Belonging Scale and the positive affectnegative affectS-short form). This will be aided by the researcher (me) reading the questions out loud to children in their class.
2. Once the measures are completed, the researcher shall then provide an introduction for the children in groups according to which condition they have been placed in (gratitude sharing, gratitude not-sharing, neutral events sharing, neutral events non-sharing). The condition they are in will not be shared with the children at this point (i.e. they will not be told that some of the other children are taking part in a slightly different version of task than they are).
3. Diaries will then be handed out to the children. The diaries will reiterate the instructions given by the researcher i.e. either record three things they are grateful for or three things that have happened to them this week.
4. Children will be given 10 -15 minutes, three times a week, to complete their diary during the school day (this will take place over three to four weeks)
5. At the end of each week, children in the sharing conditions will be asked to select three items from their diary that week, which were either their favourite (for those in the gratitude diary condition) or their most important moments (for those in the neutral event condition). The instructions and introduction given by the researcher will inform them that they will be sharing some of these selected experiences with the researcher once the diaries are complete.
6. At the end of the intervention, children will be sent in small groups to the researcher. Those in the sharing condition will be invited to share a selection of the previously selected diary items with the researcher. Those in the non-sharing condition will be sent to the researcher to hand in their diaries and be thanked for finishing them.
7. Following this, measures shall be completed by the children in the same way they were completed pre-intervention.
8. The researcher will return 2 to 4 weeks post-intervention to repeat the measures one last time as a follow-up. The children will be given a debrief by the researcher to thank them for their participation and explain what the research was about.

Are there any benefits in my child taking part?

There are no direct benefits to your child, however, this study will help our understanding of children's gratitude. This could be helpful to schools that are considering using gratitude interventions in the future.

Are there any risks involved?

This study does not involve any risks to your child, and all tasks they complete as part of the study will not differ greatly from tasks they would usually be given as part of a typical school day.

What data will be collected?

Data will be collected in the form of questionnaires and diaries. Children will be asked to write their names on the questionnaires and diaries. Once the children's questionnaires are completed, their names will be removed and replaced with a participant number, to ensure all data is anonymous. Similarly, children's names will be removed from their diaries once they are complete. No analysis will be carried out until everything has been anonymised. A data sheet that links participant numbers to their names will be kept securely at the school and destroyed at the end of the study (once follow-up measures are completed). The diaries will be checked to ensure that a minimum number of entries have been completed as well as to ensure that the entries match the condition the child has been assigned to. If, when carrying out these checks, we find any information that causes concern about a child's well-being, this information will be passed on to the school and they will use the data sheet to identify the child from the participant number and intervene as they consider appropriate.

Will my child's participation be confidential?

Your participation and the information we collect about them during the course of the research will be kept strictly confidential.

Only members of the research team and responsible members of the University of Southampton may be given access to data about your child for monitoring purposes and/or to carry out an audit of the study to ensure that the research is complying with applicable regulations. Individuals from regulatory authorities (people who check that we are carrying out the study correctly) may require access to this data. All of these people have a duty to keep this information strictly confidential.

Does my child have to take part?

No, it is entirely up to you and your child to decide whether or not to take part. If you decide you want them to take part, you will not need to do anything, and your child will be included in the study. If you **do not want** your child to take part, please complete and sign the attached opt-out consent form and return it to your child's school by [date]

What happens if I change my mind?

You have the right to change your mind and withdraw your child at any time before the end of the study without giving a reason and without your participant rights being affected. If you would like to withdraw your child, please email the school simply stating the child's name and that you would like to withdraw them. You can withdraw your child up to the last day of the study (the day that follow-up measures have been completed).

What will happen to the results of the research?

Your child's personal details will remain strictly confidential. Once follow-up measures have been completed, the sheet held at the school linking children's names to their participant numbers will be destroyed so that it is not possible through any means to identify individual children in the data collected. Accordingly, research findings made available in any reports or publications will not include information that can directly identify your child. The anonymised results will be analysed and written up as part of the researcher's doctoral thesis project. This write-up will be available from the university's 'ePrints' website (eprints.soton.ac.uk) following its final submission; also, it might be published on the university's course blog (blog.soton.ac.uk/edpsych/) or submitted for publication in a peer-reviewed journal. The anonymised results may be made available to other researchers as part of further research. They will also be shared with your child's school.

Where can I get more information?

If you would like more information about this study, you can contact the researcher or research supervisors by email using the details below.

Jessica Millington (Researcher): j.j.millington@soton.ac.uk

Colin Woodcock (Supervisor): c.woodcock@soton.ac.uk

Catherine Brignell (Supervisor): c.brignll@soton.ac.uk

What happens if there is a problem?

If you have a concern about any aspect of this study, you should speak to the researchers who will do their best to answer your questions. You can use the contact details provided above. If you remain unhappy or have a complaint about any aspect of this study, please contact the University of Southampton Research Integrity and Governance Manager (023 8059 5058, rgoinfo@soton.ac.uk).

Data Protection Privacy Notice

The University of Southampton conducts research to the highest standards of research integrity. As a publicly-funded organisation, the University has to ensure that it is in the public interest when we use personally-identifiable information about people who have agreed to take part in research. This means that when you agree to take part in a research study, we will use information about you in the ways needed, and for the purposes specified, to conduct and

complete the research project. Under data protection law, 'Personal data' means any information that relates to and is capable of identifying a living individual. The University's data protection policy governing the use of personal data by the University can be found on its website (<https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page>).

This Participant Information Sheet tells you what data will be collected for this project and whether this includes any personal data. Please ask the research team if you have any questions or are unclear what data is being collected about you.

Our privacy notice for research participants provides more information on how the University of Southampton collects and uses your personal data when you take part in one of our research projects and can be found at <http://www.southampton.ac.uk/assets/sharepoint/intranet/ls/Public/Research%20and%20Integrity%20Privacy%20Notice/Privacy%20Notice%20for%20Research%20Participants.pdf>

Any personal data we collect in this study will be used only for the purposes of carrying out our research and will be handled according to the University's policies in line with data protection law. If any personal data is used from which you can be identified directly, it will not be disclosed to anyone else without your consent unless the University of Southampton is required by law to disclose it.

Data protection law requires us to have a valid legal reason ('lawful basis') to process and use your Personal data. The lawful basis for processing personal information in this research study is for the performance of a task carried out in the public interest. Personal data collected for research will not be used for any other purpose.

For the purposes of data protection law, the University of Southampton is the 'Data Controller' for this study, which means that we are responsible for looking after your information and using it properly. The University of Southampton will keep identifiable information about your child for 10 years after the study has finished after which time any link between you and your information will be removed.

To safeguard your rights, we will use the minimum personal data necessary to achieve our research study objectives. Your data protection rights – such as to access, change, or transfer such information - may be limited, however, in order for the research output to be reliable and

accurate. The University will not do anything with your personal data that you would not reasonably expect.

If you have any questions about how your personal data is used, or wish to exercise any of your rights, please consult the University's data protection webpage (<https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page>) where you can make a request using our online form. If you need further assistance, please contact the University's Data Protection Officer (data.protection@soton.ac.uk)

After submission of the thesis, all anonymised data will be stored in the university's research data repository, where it is accessible to other researchers. As the data will contain no identifiable information, it is deemed suitable for the data to be made available via open access without breaching any ethical, privacy or confidential requirements

[illegible]

Study Title: The Impact of Sharing Gratitude on Children's Sense of School Belonging and Mood

Researcher: Jessica Millington

ERGO number:

I have read the participant information sheet and do not wish my child

(name) in

(class) to take part in this study.

Signed _____ (parent/guardian)

Appendix I Script for Children

Part 1: Introduce activity to whole class and questionnaires

Hello everyone, my name is Jess Millington.

I'm training to be an Educational Psychologist and my role involves working with children and their teachers, in lots of different schools. My job is to understand what children think about school and how they learn best. I am also a researcher and I am interested in how children like you feel about themselves and how they feel about school.

Today I am going to ask you to help me by doing two jobs for me. The first things we are going to do today is to complete three very short questionnaires; we will be going through these all together.

The second job will involve asking you to do a small writing task over the next 4 weeks. I will explain exactly what this will involve in smaller groups after the questionnaire. I want to let you know that it is ok for anyone to choose not to participate in this study at any time by telling your teacher or another adult that you don't want to take part anymore. Does everyone understand that they are able to do this? [Children to show researcher they understand by showing thumbs up gesture. Researcher to explain again if one or more child is not sure.]

The first questionnaire is all about how you gratitude. We are going to go through each question together and I am going to read each question and you need to Tick a box to say how often each sentence is true for you. Is it never true, not very often, sometimes true, very often true or always true. If anyone gets stuck or doesn't know how to answer the question just put your hand up and I'll come round and help you. [Researcher to read the instructions of the questionnaires aloud and to administer the questionnaire as specified by the instructions].

Well done everyone, there is another short questionnaire to complete. This one is all about how children feel about school. If anyone gets stuck or doesn't know how to answer the question just put your hand up and I'll come round and help you. For each statement decide whether you think its 'true', not true about you feel, or you are not sure. (read questionnaire)

Well done everyone, there is one shorter questionnaire to complete. This one is all about how children feel. If anyone gets stuck or doesn't know how to answer the question just put your hand up and I'll come round and help you.

[Researcher to read the instructions of the questionnaires aloud and to administer the questionnaire as specified by the instructions]

Thank you everyone for completing your questionnaires. Please make sure your name is on the top of the sheet. All of the information I have gathered will be kept in a safe, locked place or held on a computer. I will make all of this information anonymous, which means that it will be impossible for other people to trace back who said what and that I won't share any of this information with anyone unless they are helping me with my research. Does that make sense? Do you have questions for me? Now we are going to get into four groups.

Part 2 – Explanation of task

Group 1: Ok anyone with a red dot on their questionnaire (gratitude sharing), can you come with me and bring your questionnaires [researcher to take children to a quiet space away from the other children].

You're going to help me by keeping a diary every day for four weeks. It's going to be short diary, you only need to write up to three things in your diary and only three times a week. In your diary, I would like you to write down three things that you feel grateful or thankful for that happened during your school day. Your diary is called a gratitude diary. Does anyone know what gratitude means?

Gratitude means you are thankful for something or something that someone has done for you. For example, you could be thankful for your friend because they played with you at lunchtime. Your sentence is going to start with 'I am thankful...' and you just need to complete the sentence and say why [researchers to show examples]. It doesn't matter about spelling or punctuation, just concentrate on writing up to three sentences for three events during the day. At the end of the week I would like you to look back over your week and choose your 3 favourite things to be grateful for. You can colour in the smiley face next to your chosen gratitude [show them the smiley faces in the diary]. At the end of the 4 weeks, you will come with me and share some of your favourite things to be grateful for.

Here is your diary [researcher to show children their diary]. You can write your name and the number on your questionnaire on the front cover. It is really important that you don't show anyone your diary and you will need to keep it in a safe place (say where). No-one will look at your diary apart from me. Does that sound like something you can do? Does anyone have any

questions? If you think of any questions you would like to ask once I have gone or if you have any worries, then you can ask to speak to (insert name of school staff member). If you would like to withdraw your information then this can be arranged by asking (school contact) to contact me. [Children to go back to class].

Group 2: Ok blue dot group (gratitude non sharing group), can you come with me and bring your questionnaires [researcher to take children to a quiet space away from the other children]

You're going to help me by keeping a diary every day for four weeks. It's going to be short diary, you only need to write up to three things in your diary and only three times a week. In your diary, I would like you to write down three things that you feel grateful or thankful for that happened during your school day. Your diary is called a gratitude diary. Does anyone know what gratitude means?

Gratitude means you are thankful for something or something that someone has done for you. For example, you could be thankful for your friend because they played with you at lunchtime. Your sentence is going to start with 'I am thankful...' and you just need to complete the sentence and say why [researchers to show examples]. It doesn't matter about spelling or punctuation, just concentrate on writing up to three sentences for three events during the day. At the end of the week there is a small task that asks you to find and colour in 3 smiley faces within the diary.

Here is your diary [researcher to show children their diary]. You can write your name and diary number (the same as the questionnaire) on the front cover. It is really important that you don't show anyone your diary and you will need to keep it in a safe place (say where). No-one will look at your diary apart from me. Does that sound like something you can do? Does anyone have any questions? If you think of any questions you would like to ask once I have gone or if you have any worries, then you can ask to speak to (insert name of school staff member). If you would like to withdraw your information then this can be arranged by asking (school contact) to contact me. [Children to go back to class].

Group 3: Ok anyone with a yellow dot (Neutral event – sharing) can you come with me [researcher to take children to a quiet space away from the other children].

You're going to help me by keeping a diary every day for four weeks. You will write in your diary 3 times a week. In your diary, I would like you to write down up to three things that you remember from your school day in a factual way, like a news reporter would record details about the news. For example, you could write 'We had PE today and we got to play basketball' [researchers to show examples]. It doesn't matter about spelling or punctuation, just concentrate on write three sentences for three events during the day. At the end of the week I would like you to look over your sentences and choose the three most important learning moments. You can colour in the smiley face next to your chosen important learning moments [show them the smiley faces in the diary]. At the end of the 4 weeks, you will come with me and share some of these important learning moments. diary.

Here is your diary [researcher to show children their diary]. You can write your name and diary number on the front cover. It is really important that you don't show anyone your diary and you will need to keep it in a safe place (say where). No-one will look at your diary apart from me. Does that sound like something you can do? Does anyone have any questions? If you think of any questions you would like to ask once I have gone or if you have any worries, then you can ask to speak to (insert name of school staff member). If you would like to withdraw your information then this can be arranged by asking (school contact) to contact me. [Children to go back to class]

Group 4: Ok green dot group (Neutral event – non sharing) can you come with me and bring your questionnaire with you [researcher to take children to a quiet space away from the other children].

You're going to help me by keeping a diary for four weeks. You will write in your diary 3 times a week. In your diary, I would like you to write down up to three things that you remember from your school day in a factual way, like a news reporter would record details about the news. For example, you could write 'We had PE today and we got to play basketball' [researchers to show examples]. It doesn't matter about spelling or punctuation, just concentrate on write three sentences for three events during the day. At the end of the week there is a small task that asks you to find and colour in 3 smiley faces within the

Here is your diary [researcher to show children their diary]. You can write your name and diary number (Same as questionnaire) on the front cover. It is really important that you don't show

anyone your diary and you will need to keep it in a safe place (say where). No-one will look at your diary apart from me. Does that sound like something you can do? Does anyone have any questions? If you think of any questions you would like to ask once I have gone or if you have any worries, then you can ask to speak to (insert name of school staff member). If you would like to withdraw your information then this can be arranged by asking (school contact) to contact me.

[Children to go back to class]

Appendix J Sample of Diaries

Grateful sharing

Instructions

Sometimes it is good to think about things that make you feel thankful. These thoughts are like jewels in a treasure chest. Even the smallest jewels are precious.

Your task is to keep a diary:

- You will write about **3 things** you are thankful for that have happened during your day at school.
- At the end of the week you will **choose 3 favourite entries**
- You will share some of your favourites with an adult when you have finished the diary
- You will write in your diary 3 times a week, for 4 weeks.



For example:

I am thankful for my teacher who helped me when I had a question.
 I am thankful for my friend who let me borrow a pencil when I didn't have one.
 I am thankful for the sunshine today because it made my face feel warm.

DATE: - _____

WEEK 1

I am thankful for

I am thankful for

I am thankful for

Grateful non sharing

Instructions

Sometimes it is good to think about things that make you feel thankful. These thoughts are like jewels in a treasure chest. Even the smallest jewels are precious.

Your task is to keep a diary:

- You will write about **3 things** you are thankful for that have happened during your day or the last few days at school.
- You will write in your diary 3 times a week, for 4 weeks.
- You will be asked to complete a small task at the end of each week



Image designed by Freepress, <https://www.freepress.com/>

For example:

I am thankful for my teacher who helped me when I had a question.
 I am thankful for my friend who let me borrow a pencil when I didn't have one.
 I am thankful for the sunshine today because it made my face feel warm.

DATE: - _____	WEEK 1
I am thankful for	

I am thankful for	

I am thankful for	

Neutral event sharing

Your task is to keep a diary:

- You will write about **3 things** that have happened during your day or the last few days at school.
- At the end of the week you will **choose up to 3 most important moments**
- You will share some of these moments with an adult when you have finished the diary
- You will write in your diary 3 times a week, for 4 weeks.



Write a sentence each about **3 small things** that have happened in your school day.

For example:

We had an assembly about harvest.
I played football at lunchtime.
We learned about sound in science.

DATE: - _____

WEEK 1

1.

2.

3.







Neutral event non-sharin

Your task is to keep a diary:

- You will write about **3 things** that have happened during your day or the last few days at school.
- You will write in your diary 3 times a week, for 4 weeks.
- At the end of each week you will be asked to do one quick task at the bottom of the page



Write a sentence each about 3 small things that have happened in your school day.

For example:

We had an assembly about harvest.
I played football at lunchtime.
We learned about sound in science.

	DATE: - _____	WEEK 1
1.	_____	_____
2.	_____	_____
3.	_____	_____

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