Implementing Effective Positive Psychology Interventions to Support the Well-Being of Young People in Schools: A Meta-Analysis of Randomised and Non-Randomised Interventions and a Q Study of Educational Psychologists' Perceptions Regarding Effective Implementation

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SUMMARY

Context: In recent years there has been an increased focus upon supporting the psychological well-being of young people in UK schools. Positive psychology provides a well suited framework for educational psychologists (EPs) to implement well-being interventions. However, the efficacy of multi-component positive psychology interventions (PPIs) in schools has not yet been well established. Furthermore, it is essential that consideration is given to how EPs can best support schools to implement interventions effectively, as factors such as implementation quality have been shown to be vital to ensure intervention efficacy.

Objectives: To estimate the efficacy of multi-component PPIs at improving the well-being of children and young people in schools and to explore how EPs can best support schools with the effective implementation of well-being interventions.

Methodology: A meta-analysis of the research evidence was conducted in order to estimate the effectiveness of multi-component PPIs at improving the well-being of children and young people in schools. In addition, a Q study was conducted to explore the perceptions of 24 EPs regarding the effective implementation of PPIs in schools. Participants were required to sort 40 statements regarding possible procedures into a forced choice quasi-normal distribution.

Results: A random-effects model meta-analysis was conducted using twenty-two studies that met the inclusion criteria. Multi-component PPIs had a bias-adjusted pooled effect size of $r = 0.22$; 95% CIs 0.09-0.36; $p < 0.05$; indicating a small positive effect size. Significant heterogeneity among studies was observed ($I^2 = 97.8\%$). Moderator analysis showed that interventions delivered by researchers were significantly more effective than interventions delivered by teachers, however a large degree of heterogeneity remained. Additional analyses did not reveal any further contextual moderators. Within the Q study, EPs gave their views on the most practical and effective methods to support schools to implement PPIs. Q sort analysis revealed that participants significantly loaded onto four factors: *working strategically*, *working systemically*, *supporting a whole-school approach*, and *providing training and supporting high-quality implementation*.

Conclusions: Multi-component PPIs appear to be effective at improving the well-being of young people in schools and may provide a useful framework for EPs and their service users. However, the effect size is relatively small and appears to be moderated by a number of unknown contextual factors. Results from the Q study provide some practical and pragmatic suggestions for EPs to facilitate the effective implementation of well-being interventions.

Keywords: Positive Psychology, Well-Being, Multi-component Positive Psychology Interventions, PPIs, Meta-Analysis, Q Methodology

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LIST OF ABBREVIATIONS

ACT ..... Acceptance and Commitment Therapy
BERA ..... British Educational Research Association
BMA ..... British Medical Association
CAMHS ..... Children & Adolescent Mental Health Service
CASEL ..... Collaborative for Academic, Social, and Emotional Learning
CBT ..... Cognitive Behavioural Therapy
CIs ..... Confidence Intervals
DfE ..... Department for Education
EBP ..... Evidence-Based Practice
ELSA ..... Emotional Literacy Support Assistant
EMMIE ..... Effect Size, Mechanism, Moderators, Implementation, Economic
EP ..... Educational Psychologist
EPS ..... Educational Psychology Service
NICE ..... National Institute of Clinical Excellence
OECD ..... Organisation for Economic Co-operation and Development
PATH ..... Planning Alternative Tomorrows with Hope
PERMA ..... Positive Emotions, Engagement, Relationships, Meaning, Accomplishments
PICO ..... Population, Intervention, Comparison, Outcome
PICOS ..... Population, Intervention, Comparison, Outcome, Study Design
PPIs ..... Positive Psychology Interventions
PRISMA ..... Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RCT ..... Randomised Control Trial
SAFE ..... Sequenced, Active, Focused, Explicit
SEAL ..... Social & Emotional Aspects of Learning
SEN ..... Special Educational Needs
SENCo ..... Special Educational Needs Co-ordinator
SPIDER ..... Sample, Phenomenon of Interest, Design, Evaluation, Research Type
SPSS ..... Statistical Package for Social Scientists
SWOT ..... Strengths, Weaknesses, Opportunities, Threats
WAG .....Welsh Assembly Government
QUOROM ..... Quality of Reporting of Meta-Analyses

INTRODUCTION

1.1 Well-Being: The Current Context

Over the past two decades there have been numerous national and local government policies, educational initiatives, and targeted interventions introduced within UK schools in order to support the social and emotional development of young people (e.g. ELSA (Osborne & Burton, 2014), Attachment Aware Schools (Parker & Levinson, 2018), Nurture Groups (Cheney, Schlösser, Nash, & Glover, 2014), and Emotion Coaching (Gus, Rose, & Gilbert, 2015) to name but a few). The increased focus upon this aspect of personal development within schools reflects a growing recognition of the importance of the social, emotional, and motivational components of learning (e.g. Banerjee, Weare, & Farr, 2014), and a cultural shift towards a prominent general well-being agenda within the UK (e.g. Office for National Statistics, 2018). At the same time there is a recognition of the mounting mental health and well-being difficulties experienced by young people in the UK (e.g. Department for Education [DfE], 2018), and an increased understanding regarding the far reaching impact that mental health and well-being difficulties can have upon both an individual and wider society (e.g. Greig, MacKay, Roffey, & Williams, 2016; National Institute for Clinical Excellence [NICE], 2008; Wolpert, Humphrey, Belsky, & Deighton, 2013).

Within schools and educational institutions there exist significant opportunities to nurture the psychological well-being of children and young people (Cheney et al., 2014). The Department for Education (DfE, 2018) has stated a number of ways in which schools can make use of cultures and practices to foster and promote emotional well-being and good mental health. For instance, a committed senior management team can work closely with other professionals in order to access a range of support services. In Wales, there has been an increased emphasis on the need to focus on pupil well-being as a key part of the broader curriculum (Donaldson, 2015). Well-being is now one of the five key aspects of the Estyn inspection framework and one of the six core Areas of Learning and Experience (AoLEs) in the new Welsh curriculum (Welsh Government, 2018).

Schools are in a unique position to provide support to young people and publications such as the DfE's '*Counselling in Schools: a blueprint for the future'* (DfE, 2015) call attention to the growing demands that are being placed upon UK schools to foster the

psychological well-being of young people (see also Graham, Phelps, Maddison, & Fitzgerald, 2011; Vostanis, Humphrey, Fitzgerald, Deighton, & Wolpert, 2013). For example, schools are expected to provide resources internally that are funded through the school budget, as well as seek support from external services such as Educational Psychology Services and Child and Adolescent Mental Health Services (CAMHS) (Hanley, Winter, & Burrell, 2017). These requirements must be considered within the current political and socio-economic context of austerity measures and economic hardship within the UK, as both schools and children's services face increasing budgetary cuts and spending restrictions (British Medical Association, 2016). As a result, teaching staff are increasingly taking on pastoral and supportive roles that would once have been occupied by dedicated members of school staff (Hanley et al., 2017). These school practitioners often feel unsupported and untrained when providing for young people's mental health and well-being needs (Hanley et al., 2017).

Educational psychologists (EPs) are extensively portrayed throughout the research and advice literature as helping professionals who are able to support schools at a variety of levels to implement the well-being agenda (e.g. Liddle & Carter, 2015; Stanbridge & Campbell, 2016). Greig et al. (2016) suggest that EPs have the psychological expertise, skills and knowledge of educational contexts necessary to support schools with well-being. For example, the Welsh Assembly Government's (2001) child and adolescent mental health strategy document recommends that EPs should help schools and school staff to establish systems and strategies to support the mental health of children and young people. The DfE (2011) Special Educational Needs and Disability Green Paper states that EPs should support teachers and other professionals working with children with special educational needs and disabilities (SEND) to develop their skills and competencies in order to help young people with their mental well-being. The National Institute for Clinical Excellence (NICE; 2009) suggests that EPs are in a position to empower schools and other educational establishments to adopt systemic approaches to support the social and emotional well-being of young people through building organisational capacity, imparting specialist skills and resources, and also providing relevant advice and support. However, despite this widespread recognition and general guidance, there are very few studies which have explored the exact practical and pragmatic strategies and procedures that EPs should adopt to support schools in the best way possible to implement well-being interventions and approaches (Chatwin, 2018).

1.2 Supporting the Development of Well-Being

There exists a substantial body of international evidence to suggest that effectively implemented psychological interventions which support the development of a young person's social and emotional well-being can lead to a range of positive outcomes (such as health, social, educational, and economic) for young people, families, and communities (see, for example, Barry, Clarke, Jenkins, & Patel, 2013; Clarke, Morreale, Field, Hussein, & Barry, 2015; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; OECD, 2015; Weare & Nind, 2011). The research evidence also demonstrates that a focus upon fostering positive social and emotional competencies within young people can have a more significant impact in the long term than interventions and approaches that aim solely to decrease negative outcomes (Barry & Dowling, 2015; Barry & Jenkins, 2007; Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004; Durlak et al., 2011; O'Connell, Boat, & Warner, 2009; Weare & Nind, 2011).

There are a number of additional challenges to understanding and supporting well-being in young people that all professionals must take into consideration. For example, well-being should not be conceptualised as an objective uni-dimensional construct and instead should be considered as a multi-dimensional construct which is contingent upon environmental context (Dodge, Daly, Huyton, & Sanders, 2016). Dodge et al. (2016) argue that well-being is a dynamic and fluctuating construct that represents the interaction between an individual's resources (psychological, social, and physical) and challenges (psychological, social, and physical). Therefore, when considering suitable psychological models and frameworks to support well-being, EPs must ensure that these approaches not only focus upon fostering positive characteristics but also conceptualise well-being as a multi-faceted construct that acknowledges an individual's personal strengths and challenges.

1.3 Positive Psychology

Many traditional psychological models have conceptualised favourable well-being and positive mental health as being the absence of negative symptomology and thus have been based upon disease and deficit theoretical models of psychology (Seligman, Rashid, & Parks, 2006). However, Seligman and Csikszentmihalyi (2000) contend that well-being is not simply the lack of negative psychological states, but is something more comprehensive, and thus propose the importance of studying and promoting human flourishing through 'positive psychology' (Seligman, 2012). Positive

psychology is the study and development of positive emotions, human flourishing, and the development of personal characteristics such as well-being, hope, optimism, joy, happiness, perseverance, resilience, satisfaction, and relationships (Seligman, 2002). Vella-Brodrick (2011) defines the goals of positive psychology as fostering an optimal level of individual and collective wellbeing, equipping individuals with the strengths and skills needed to face the challenges of everyday life, and mitigating issues through a preventative model.

Seligman's approach posits that EPs (amongst others) should be looking more widely at how to embed positive practices into classrooms and build a culture within schools that enables all people to flourish rather than solely focusing efforts upon those with overt difficulties. Positive psychology provides a coherent and reasoned theoretical and practical basis with which EPs can consider well-being (e.g. positive psychology interventions aim to increase positive affect, meaning in life, and engagement) (Seligman, Steen, Park, & Peterson, 2005). Furthermore, positive psychology acknowledges and accounts for the multi-dimensional nature of well-being and allows for interventions and strategies to be both holistic and targeted to particular aspects of well-being (e.g. through using the Positive Emotions, Engagement, Relationships, Meaning, and Accomplishments [PERMA] model of psychological well-being). Therefore, positive psychology is highly congruent with both the wider research evidence and general guidance regarding conceptualising and promoting well-being (e.g. a focus on fostering positive social and emotional competencies, acknowledging personal strengths and challenges) and can provide a cogent framework for EPs to use when supporting the well-being of children and young people in schools.

1.4 Positive Psychology Interventions

Positive psychology interventions (PPIs) are psychological interventions that are designed to increase positive feelings, cognitions, or behaviours as opposed to interventions designed to alleviate symptoms or disorders (Sin & Lyubomirsky, 2009). PPIs engage individuals in activities that develop characteristics associated with positive well-being, such as optimism and kindness. In educational settings they have most frequently targeted gratitude, the identification and use of character strengths, hope and goal-orientated thinking, kindness, and optimistic thinking (Wright, 2020a). Multi-component PPIs refer to interventions that include a variety of activities, and which aim to develop two or more internal and/or external characteristics associated

with psychological well-being (e.g. gratitude, optimism, character strengths, and social relationships) (Hendriks, Schotanus-Dijkstra, Hassankhan, de Jong, & Bohlmeijer, 2019). There have been a number of published studies that have investigated the impact of multi-component PPIs on the well-being of children and young people. For example, Bite Back (Burckhardt et al., 2015), Maytiv School Program (Shoshani & Steinmetz, 2014; Shoshani, Steinmetz, & Kanat-Maymon, 2016), and the Well-Being Promotion Program (Suldo, Savage, & Mercer, 2014; Roth, Suldo, & Ferron, 2017). Positive psychology interventions are increasingly being implemented within educational institutions to support and develop the well-being of children and young people (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009; Shankland & Rosset, 2017; Waters, 2011).

It is imperative that any psychological intervention be evaluated in order to establish whether it reliably impacts upon the desired outcomes. Evaluating the effectiveness of interventions is essential to ensure that EPs are engaging in evidence-based practice (Rousseau & Gunia, 2016). There is extensive demand for evidence-based practices in schools (e.g. Kratochwill, 2007; Nelson & Campbell, 2017), however there exists some discrepancies regarding the necessary standards of evidence that should be satisfied before implementing an intervention (Forman, Olin, Hoagwood, Crowe, & Saka, 2009). For example, mental health interventions readily available to schools and identified as being evidence-based may meet differing criteria (e.g. providing outcome data demonstrating efficacy or utilising school-based components) (Forman et al., 2009).

Studies of multi-component PPIs have thus far provided evidence to suggest a significant impact upon outcomes such as psychological well-being (Manicavasagar et al., 2014), life-satisfaction (Suldo et al., 2014), self-esteem (Shoshani & Steinmetz, 2014), and academic achievement (Shoshani et al., 2016). However, overall the evidence from evaluating multi-component PPIs implemented in schools appears to be uncertain. It is possible that this may be due to between-study differences in definitions of theoretical constructs, research methodologies, approaches, measuring instruments, and analytical techniques employed (Chodkiewicz, 2018).

There have been a small number of systematic reviews and meta-analyses which have synthesised the research evidence and have highlighted the potential benefits of PPI programmes. For example, Bolier et al. (2013) showed that PPIs can be effective at

enhancing subjective well-being (i.e. hedonic well-being, which is characterised by pleasure and happiness) and psychological well-being (i.e. eudaemonic well-being, which is characterised by meaning, engagement, and self-realisation). Hendriks et al. (2019) demonstrated that multi-component PPIs had a small to moderate effect on subjective well-being, psychological well-being, and depression. However, all studies included within these meta-analyses involved adult populations and therefore conclusions may not be applicable to children and young people in schools. Renshaw and Olinger-Steeves (2016) evaluated the use of single component gratitude-based interventions within schools and found them to be relatively ineffective, however they did not consider the efficacy of multi-component PPIs that target multiple aspects of well-being (for additional reviews and analyses regarding PPIs, see also Brownlee et al., 2013; Chodkiewicz & Boyle, 2017; Neil & Christensen, 2009; Shankland & Rosset, 2017; Sin & Lyubomirsky, 2009; Waters, 2011). A review of the currently available literature demonstrates that there has not been a synthesis of the research regarding the use of multi-component PPIs in schools. Evaluating the efficacy of school-based well-being interventions is an important initial stage that must occur before EPs can consider how best to support schools to implement well-being interventions. It is essential that the research evidence is synthesised and evaluated to assess whether school-based multi-component PPIs have a positive impact upon students' well-being and therefore may be considered an evidence-based approach that EPs can implement within schools.

1.5 Supporting the Effective Implementation of Well-Being Interventions

Comprehensive reviews of the research evidence have highlighted a number of important factors that determine whether social and emotional skills-based interventions are effective at supporting well-being (e.g. CASEL, 2019; Durlak et al., 2011; Weare & Nind, 2011). For example, Durlak et al. (2011) found that high quality implementation resulted in larger effect sizes, and was characterised by a consistent, clear, and intensive approach that adhered to programme fidelity. Additional key factors include integrating the intervention within the curriculum, the importance of staff training, and the need for ongoing support throughout implementation (CASEL, 2019; Durlak et al., 2011; Weare & Nind, 2011). However, concerns have been raised that facilitators and barriers to success are not always given the necessary consideration before implementing well-being interventions in schools (Wanless & Domitrovich, 2015). Therefore, the current implementation quality of school-based well-being interventions appears to be haphazard which can result in the reduction of desired outcomes (Durlak et al., 2011;

Greenberg, 2010). As previously discussed, EPs are widely identified as educational professionals who are able to implement directly or to support the implementation of social and emotional interventions. Therefore, it is important that EPs use their psychological skills and knowledge of educational contexts to support schools with the effective implementation of well-being interventions (Greig et al., 2016).

Intervention programmes may be classified as universal, selective, or indicative (Dawood, 2013). Universal intervention programmes are those which are provided to all people within a target population (e.g. a whole school). Selective intervention programmes are aimed at specific sub-sections of a target population based upon risk factors (e.g. young people with siblings with mental health difficulties). Indicative intervention programmes are those which are targeted at people within a population who have already demonstrated difficulties or issues (e.g. young people at risk of exclusion). In a broad-ranging review of the research evidence, Barry and Dowling (2015) state that supporting well-being should be a whole school approach that includes both universal and indicative intervention programmes, and that the balance between the two should be defined by the needs and context of the school and its young people. Similarly, Banerjee et al. (2014) argue that supporting the well-being of young people should be treated as a whole-school approach rather than just a specific intervention that happens inside or outside of the classroom; well-being interventions should be proactive rather than reactive; and approaches in schools should consider all learners and not just those with identified issues. These recommendations are supported by Barry and Dowling (2015) who also identified some of the key characteristics of effective interventions. These include programmes with a strong theoretical basis and clearly defined goals, an explicit focus on teaching skills related to social and emotional competencies, and that interventions with a focus upon developing generic social and emotional skills can provide a skill base for targeting specific issues. Furthermore, Durlak et al. (2011) reported that there were four common elements found within the most effective programmes and that these may be represented by the acronym **SAFE**: (1) **S**equenced activities that provide a coherent structure to develop skills (2) **A**ctive methods of learning (3) **F**ocused upon the development of one or more specific skills (4) **E**xplicit about the skills that were being developed. Therefore, it is crucial that EPs identify and evaluate appropriate psychological intervention programmes to support well-being that include these key characteristics.

1.6 Summary and Research Questions

The psychological well-being of children and young people has been increasingly highlighted as an important area of need and warrants further investigation. Schools and educational institutions are in a prime position to foster the psychological well-being of children and young people, yet the research literature has suggested that schools need additional support to implement interventions and approaches effectively (e.g. through ensuring the adoption of evidence-based approaches and accessing support to monitor implementation quality). EPs possess the psychological skills and knowledge to assist schools effectively and are therefore eminently suitable to help schools to implement well-being interventions and approaches.

Positive psychology provides an appropriate psychological framework with which to support well-being in schools. There is some research evidence to suggest that multi-component PPIs may be effective when used with children and young people. Nevertheless, before implementation, it is essential that interventions are evaluated rigorously to ensure that they constitute an evidence-based approach to practice. In addition, it is important that consideration is given to how EPs can best support schools to implement interventions, as factors such as intervention quality have been shown to be critical. Furthermore, once efficacy has been established then questions still remain regarding utility, practicality, and logistics within any given context. There have been a small number of systematic reviews exploring the use of PPIs within schools to support the well-being of young people (e.g. Brownlee et al., 2013; Shankland & Rosset, 2017). However, there appears to be a paucity of research that ascertains whether multi-component PPIs are effective at supporting the well-being of children and young people in schools and thoroughly explores the contextual moderators in such a way as to provide a strong rationale for EPs to recommend these interventions to schools. In addition, there is a noted lack of research that explores how EPs might support schools to implement well-being interventions given that a variety of factors can impact upon intervention effectiveness. Therefore, the purposes of this research are to:

- ascertain whether multi-component positive psychology interventions are effective at promoting the psychological well-being of children and young people within schools;
- explore the means by which EPs might best support schools to implement effective positive psychology interventions.

Within the proposed research, 'positive psychology' will be used as an umbrella term to account for interventions and programmes that are largely based upon Seligman's model of positive psychology and are focused upon fostering optimal well-being through developing positive social and emotional competencies to build personal resilience (Vella-Brodrick, 2011). Rigorous evaluation of PPIs will provide additional evidence to validate the use of such programmes within schools to promote the well-being of young people. In addition, consideration of effective implementation should provide EPs with evidence-informed, practical, and pragmatic suggestions to guide schools in supporting the well-being of their students. In light of these purposes, the following research questions were generated:

- *Research Question 1:* Are multi-component positive psychology interventions effective at supporting the psychological well-being of young people in schools?
- *Research Question 2:* How can EPs best support schools to implement practical and effective positive psychology interventions?

1.7 Overview of the Thesis

The thesis is presented in three parts: empirical paper 1, empirical paper 2, and the critical review. Empirical paper 1 addresses research question 1 through the use of a systematic review and meta-analysis of the research evidence. The relevant literature, methodology, results, and a critical discussion of the results with reference to the literature applicable to research question 1 are presented within empirical paper 1 (Wright, 2020a). Empirical paper 2 addresses research question 2 through using Q methodology. The relevant literature, methodology, results, and a critical discussion of the findings with reference to the literature applicable to research question 2 are presented within empirical paper 2 (Wright, 2020b). There are explicit references made between the two empirical papers in order to connect the different stages of the process and to demonstrate the practical and pragmatic nature of the research. The thesis concludes with a reflective and reflexive critical review of the entire research process and the development of the researcher. The research was undertaken using a pragmatic philosophical position (i.e. a focus on 'what works') and, as such, the research has been conducted and presented in a manner that the researcher considered to be most practical and useful for the reader.

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Implementing Effective Positive Psychology Interventions to Support the Well-Being of Young People in Schools: A Meta-Analysis of Randomised and Non-Randomised Interventions

EMPIRICAL PAPER 1

By David Wright

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ABSTRACT

Context: The efficacy of multi-component positive psychology interventions (PPIs) to support the well-being of young people in schools has not yet been well established.

Objective: To estimate the effectiveness of multi-component PPIs at improving the well-being of children and young people in schools.

Data Sources: A systematic review of English language articles using the following databases: *PsycINFO, MEDLINE, Social Policy and Practice, Cochrane Library, Web of Science, SCOPUS, ERIC, British Education Index, Child Development & Adolescent Studies, ASSIA, IBSS, PubMed, Google Scholar, Cardiff University and NHS Wales Library Database, British Library EThOS, DART-Europe E-Theses, ProQuest Dissertations and Theses, Theses Collections Wales, OATD, OpenDissertations, TROVE*. Additional studies were identified by searching reference sections of publications. Search terms included: positive psychology, intervention, young person, school, well-being, randomised control trial.

Study Selection: Only studies that involved using multi-component PPIs to support the well-being of young people in schools were included. In addition, only studies that utilised an empirical measurement of well-being (e.g. life satisfaction, positive affect) that allowed for the computation of study effect size were included.

Data Extraction: Extraction of articles by the author using predefined data fields, including study quality indicators.

Data Synthesis: All pooled analyses were based on random-effects models. Twenty-two studies were identified and met the inclusion criteria: ten randomised control trials (N = 1769), eight non-randomised control trials (N = 5336), and four repeated measures design studies (N = 247). All trials utilised multi-component PPIs. Significant heterogeneity among studies was observed (I^2 = 97.9%). Multi-component PPIs had a bias-adjusted pooled effect size of r = 0.22; 95% confidence interval 0.09-0.36; $p <$ 0.05; indicating a small positive effect size. Moderator analysis revealed that interventions delivered by researchers were significantly more effective than interventions delivered by teachers who had received training, however a large degree of heterogeneity remained. Additional analyses did not reveal any further contextual moderators.

Conclusions: Multi-component PPIs appear to improve the well-being of young people in schools. This effect occurs across a wide range of ages and cultures. However, it is worth noting that the effect size is relatively small and appears to be moderated by a number of unknown contextual factors.

Keywords: Positive Psychology, Well-Being, Multi-component Positive Psychology Interventions, PPIs, Systematic Review, Meta-Analysis

2.1 Introduction

This research paper provides a systematic review and meta-analysis of the research evidence regarding the effectiveness of multi-component PPIs within schools to support the well-being of children and young people. This approach was chosen in order to address research question 1: *Are multi-component positive psychology interventions effective at supporting the psychological well-being of young people in schools?* As recommended by prior reviews of the research literature, there will also be a focus upon factors that may act as contextual moderators and thereby influence intervention effectiveness (see, for example, Brownlee et al., 2013; Chodkiewicz & Boyle, 2017; Quinlan, Swain, & Vella-Brodrick, 2012). The research paper begins with a summary of the methods used to conduct the systematic literature review and meta-analysis. This is followed by a synthesis of the research evidence and discussion of the identified research literature related to the use of multi-component PPIs in schools to support children and young people.

2.1.1. Research Design: Systematic Literature Review and Meta-Analysis

Systematic literature reviews and meta-analyses are important methods of identifying and evaluating existing research and are typically used to synthesise the research findings about a focused research question regarding efficacy (such as is the case with research question 1) and to inform evidence-based practice (Methley, Campbell, Chew-Graham, McNally, & Cheraghi-Sohi, 2014). These procedures for appraisal are considered to be the 'gold standard' of research reviews (Cooke, Smith, & Booth, 2012). Systematic reviews and meta-analyses follow a series of explicit stages such as developing keywords and search terms, determining inclusion and exclusion criteria, screening titles and abstracts, and full text reviews (for further guidelines see Butler, Hall, & Copnell, 2016 and Liberati et al., 2009). These techniques have traditionally been used within the fields of healthcare and epidemiology when synthesising quantitative studies in order to determine the effectiveness of an intervention (Haidich, 2010). However, in many other disciplines (e.g. psychology) systematic reviews and meta-analyses have become increasingly prevalent and can arguably provide valuable contributions to their respective fields and beyond (Holloway & Galvin, 2016). As a result, evidence syntheses are increasingly acknowledged as a necessary and valuable method with which to address a variety of research questions, particularly regarding intervention effectiveness (Methley et al., 2014). An initial review of the research

literature regarding multi-component PPIs within school settings revealed a number of primary studies with a range of outcomes. Therefore, it was deemed highly important to synthesise the research evidence in order to evaluate rigorously the effectiveness of positive psychology well-being interventions to ensure that EPs, among others, can engage in evidence-based practice and can ensure the best possible outcomes for their service users.

2.1.2 PRISMA Guidelines

Systematic reviews and meta-analyses should be reported thoroughly in order to allow the reader to conduct a meticulous evaluation of the investigation. As a result, guidance has been developed for authors who are reporting systematic reviews and meta-analyses (e.g. QUOROM (**Qu**ality **O**f **R**epo**r**ting **M**eta-analysis); Moher et al., 2000). A recent method developed is PRISMA (**P**referred **R**eporting **I**tems for **S**ystematic reviews and **M**eta-**A**nalyses) (Liberati et al., 2009). PRISMA provides a structured approach to ensure that authors can present a transparent and complete reporting of systematic reviews and meta-analyses. Liberati et al. (2009) have provided a comprehensive checklist of items to include when reporting a systematic review or meta-analysis (see Appendix A). Therefore, the remainder of empirical paper 1 of the thesis has been structured according to PRISMA guidelines.

2.1.3 Objectives of the Systematic Review and Meta-Analysis

The objective of the systematic review and meta-analysis was to examine whether multi-component PPIs improve the well-being of children and young people in schools. A number of trials were reviewed (including randomised controlled trials, non-randomised controlled trials, and repeated measures design studies) that assessed the efficacy of multi-component PPIs for improving well-being by considering the impact directly upon well-being or upon measures highly correlated with well-being (e.g. life satisfaction, positive affect) and when compared with no specific well-being interventions.

2.2 Meta-Analysis Methodology

The following section describes the methods used in this study to conduct the systematic review and meta-analysis. The section begins by discussing the systematic review procedure (e.g. literature search strategy, inclusion and exclusion criteria,

assessing risk of bias). This is followed by details regarding the statistical methods used within the meta-analysis (e.g. calculation of effect sizes, assessing heterogeneity).

2.2.1 Protocol and Registration

Methods of the analysis and inclusion criteria were specified in advance but were not documented in a registered protocol. This is because the methods and criteria are instead detailed within this thesis.

2.2.2 Eligibility Criteria

Table 1 specifies study characteristics and report characteristics that were used as criteria for eligibility within the synthesis, along with appropriate rationale.

Table 1. Eligibility criteria

Eligibility Criteria	**Rationale**
Types of Studies: Empirical studies	Only studies that contained primary data were included in order to ensure that the conclusions of the review and analysis were evidenced-based. Publications must report data that allow for the calculation of an effect size.
Types of Participants: Children and young people in schools	Participants attending any stages of schooling (e.g. nursery, primary, secondary) were considered to evaluate potential whole-school effectiveness of multi-component PPIs. University students were excluded from this review as these individuals were considered to be adults and therefore were outside the remit of this study.
Types of Intervention:	

Multi-component positive psychological interventions conducted in schools or educational settings	Studies comparing the benefits of multi-component PPIs on the well-being of children and young people in educational settings versus placebo, control interventions, or no interventions. This review was limited to studies that included benefits to well-being rather than including those which solely considered the reduction of psychopathological issues (e.g. depression, anxiety).
Types of Outcome Measures: Quantitative or Mixed-Methods	Primary outcome measures: well-being, positive affect, satisfaction with life, and additional correlates with well-being.
Publication Language: English-language only	Only English language publications were included due to the researcher's limited skills and resources. Non-English language studies with no available translations were not included within this review.
Publication Date: No restriction	All available studies were included within the initial review to ensure that the synthesis reflected a comprehensive examination of the research evidence.
Publication Status: No restriction	All relevant publications were reviewed, including articles in press and non-published theses, however some publications were not accessible (e.g. full text unavailable, theses stored in restricted online repositories).

2.2.3 Information Sources

Studies for inclusion within the systematic review and meta-analysis were identified by searching electronic databases and also reviewing the reference lists of relevant publications. The following databases were used to search for literature relevant to this study: *PsycINFO, PsycArticles, EMBASE, MEDLINE, Social Policy and Practice, Cochrane Library, Web of Science, SCOPUS, ERIC, British Education Index, Child Development & Adolescent Studies, ASSIA, IBSS, PubMed, Google Scholar, Cardiff University and NHS Wales Library Database, British Library EThOS, DART-Europe E-Theses, ProQuest Dissertations and Theses, Theses Collections Wales, OATD, OpenDissertations, TROVE*. Limits were applied for English language papers only. No limits were applied for publication type, publication date or publication status. Each database was searched by the researcher and in consultation with an expert librarian. The last search was run on 15 July 2019. Limited update literature searches were performed from 15 July 2019 to 28 October 2019.

2.2.4 Literature Search Framework

Within a systematic literature review, a comprehensive literature search is conducted in order to provide a thorough representation of the available research and to reduce bias when synthesising the research findings (Methley et al., 2014). There are a number of search tools that may be used as an organising framework for the literature search in order to aid the identification of relevant publications by generating key descriptors. For example: PICO (**P**opulation, **I**ntervention, **C**omparison, and **O**utcome), PICOS (**P**opulation, **I**ntervention, **C**omparison, **O**utcome, and **S**tudy type), and SPIDER (**S**ample, **P**henomenon of **I**nterest, **D**esign, **E**valuation, and **R**esearch type) (Cooke et al., 2012). The PICOS search tool was chosen as being most appropriate for the current research as this allowed for the identification of both quantitative studies and mixed-methods studies. In addition, the relatively high specificity of the PICOS tool (i.e. the ability to identify only relevant studies) enabled an efficient search strategy and thus reduced the amount of time reviewing irrelevant articles (Methley et al., 2014). In order to account for the relatively low sensitivity of the PICOS tool (i.e. the ability to identify a large number of publications that may be relevant to the researcher) (Methley et al., 2014), previous systematic reviews of the research literature were checked for comparison (e.g. Brownlee et al., 2013; Shankland & Rosset, 2017) and any relevant studies that had not been identified in the initial search were reviewed and included if deemed to be eligible. Furthermore, the reference sections of identified publications

were reviewed to check for any additional relevant studies that had not been identified by the search tool framework.

Keyword descriptors and search terms were developed by the researcher using the PICOS tool and in consultation with an expert librarian from Cardiff University. A summary of these key descriptors may be found in Table 2. Each column in Table 2 contains a set of synonyms for the key search terms. Each term in the column was entered into the database and was truncated where appropriate. All individual searches for that column were combined using the "OR" Boolean operator into a single group. Each overall group was then combined using the "AND" function to produce a final list of citations, which were saved into Endnote, and screened for duplicates. Records of all searches in each database were maintained and may be found in Appendix B.

Table 2. Key descriptors used within the PICOS search tool

PICOS Search Tool	Search Terms
Population	school* OR child* OR young person* OR young people* OR teen* OR adolescen* OR student* OR schoolchild* OR college* OR sixth form* OR education*
Intervention	(positive psych* OR positive education*) AND (intervention* OR school-based intervention* OR PPI* OR multi-component PPI*)
Comparison	N/A
Outcome	well-being OR mental health OR mental well-being OR emotional well-being OR emotion* OR psychol* well-being OR subjective well-being OR social and emotional OR strength* OR experi* OR view* OR opinion* OR belie* OR perce* OR feel* OR understand* OR know* OR attitude*
Study Type	quant* OR mixed method*

Note: (**P** AND **I**) AND [(**C** OR **O** OR **S**)]

Note: * is a truncation symbol used to retrieve terms with a common root within databases (e.g. psychol* will retrieve psychologist, psychology, psychological, and psychologists).

2.2.5 Study Selection

All identified publications underwent a two-stage standardised screening process based upon the inclusion criteria (see Table 1).

Stage 1: All publications were screened based upon title and abstract. Any ambiguous citations were included within stage 2.

Stage 2: Full text of each included citation was obtained. The reference sections of each citation were reviewed to identify additional relevant papers, which were screened using the same criteria as Stage 1. Each study was read in full and assessed for inclusion.

2.2.6 Data Collection Process

A data extraction sheet was adapted from the Cochrane Consumers and Communication Review Group's data extraction template (Cochrane Collaboration, 2011) and further developed based upon examples of summary study characteristics by Liberati et al. (2009) (see Appendix C). The data extraction sheet was pilot tested on two randomly selected studies and refined accordingly (e.g. further details were included regarding intervention conditions).

2.2.7 Data Items

Information was extracted from each included study on:

1. Participant characteristics (including age);
2. Location and setting;
3. Intervention characteristics (including PPI components, administrator, duration, and frequency);
4. Comparison groups;
5. Type of outcome measure (including measurement instruments);
6. Raw data;
7. Study design.

2.2.8 Risk of Bias in Individual Studies

The validity of the conclusions derived from a systematic review and meta-analysis depends upon the validity of the included studies, as certain methodological characteristics can bias the data (Liberati et al., 2009). Therefore, it is important that researchers conducting a systematic review and meta-analysis consider the internal validity (i.e. the validity of conclusions drawn within the context of the study) and the external validity (i.e. the validity of applying the conclusions outside the context of the study) of the included studies. This is often reported as a single 'quality' score or rating and used to judge how much weighting should be given to the findings of a research study (Gough, 2007). However, 'quality' is most likely a non-linear multi-dimensional construct that is very study-specific and difficult to measure from the available published information (Greenland & O'Rourke, 2001). As a result, quality scores used as weightings within meta-analyses would produce biased estimates of effect sizes (Greenland & O'Rourke, 2001). Therefore, it is recommended that researchers should instead assess the risk of bias when evaluating the internal and external validity of each study within the systematic review and meta-analysis (Liberati et al., 2009).

Risk of bias may be evaluated using three main methods: scales, checklists, and individual components. However, there is emerging theoretical and empirical evidence that scales and checklists may affect the conclusions of a systematic review and meta-analysis when used as weightings (e.g. Jüni, Witschi, Bloch, & Egger, 1999; Greenland & O'Rourke, 2001). Therefore, authors such as Liberati et al. (2009) advocate the use of an individual components approach. Each study was assessed to ascertain validity of eligibility within the systematic review and meta-analysis. Internal and external validity was assessed using three frameworks for randomised control trials (RCTs) (EMMIE (Johnson, Tilley & Bowers, 2015), Weight of Evidence framework (Gough, 2007), and the Cochrane Risk of Bias Tool (Higgins et al., 2011)) and two frameworks for non-RCTs and repeated measures design studies (EMMIE and Weight of Evidence framework). Multiple frameworks were combined as it was considered that no single framework was appropriate for all types of studies (e.g. the Cochrane Risk of Bias Tool is unsuitable for repeated measure design studies).

The Cochrane Risk of Bias Tool is an individual components approach that assesses internal validity of randomised control trials (Higgins et al., 2016). Bias is assessed as a judgement (high, low, or unclear) in five different domains (selection, performance,

attrition, reporting, and other) known to be methodological features which increase the risk of bias in trials (Higgins et al., 2016).

The EMMIE framework evaluates evidence in five areas that incorporate assessment of both internal and external validity:

> ***E*** *– The overall effect direction and size (alongside major unintended effects) of an intervention and the confidence that should be placed on that estimate;*
> ***M*** *– The mechanisms/mediators activated by the policy, practice, or program in question;*
> ***M*** *– The moderators/contexts related to the production/non-production of intended and major unintended effects of different sizes;*
> ***I*** *– The key sources of success and failure in implementing the policy, practice, or program;*
> ***E*** *– The economic costs (and benefits) associated with the policy, practice, or program.*
> (Johnson et al. 2015, p.463).

Johnson et al. (2015) provide types of evidence (referred to as EMMIE-E) that can be used to inform understanding of an intervention and on which assessments of quality should be based and which can inform a five-point scale for assessing individual components of quality (referred to as EMMIE-Q).

Weight of evidence is a heuristic concept for making a number of judgements related to different criteria and then combining these to make an overall judgement regarding an individual study's contribution to answering a review question (Gough, 2007). This can be used to create a framework that incorporates a generic judgement about the coherence and integrity of the evidence (i.e. the internal validity) termed Weight of Evidence A, a review-specific judgement about the appropriateness of evidence for answering the research question termed Weight of Evidence B, a judgement about the relevance of the focus of the evidence for the research question (i.e. the external validity) termed Weight of Evidence C, and an overall judgement termed Weight of Evidence D (Gough, 2007). Assessments using the Cochrane Risk of Bias Tool and EMMIE framework were incorporated into the Weight of Evidence Framework to produce an overall judgement for each study.

2.2.9 Summary Measures

The standardised difference in means is the most appropriate summary measure to compare results when studies do not yield directly comparable data (i.e. when outcome measurements are not on the same scale) (Liberati et al., 2009). Well-being is not a uni-dimensional construct and therefore is likely to be measured using a number of correlated outcomes and measurement instruments (see, for example, Bolier et al., 2013; Hendriks, Schotanus-Dijkstra, Hassankhan, de Jong, & Bohlmeijer, 2019). Therefore, the primary measure of intervention effectiveness was the standardised difference in means of well-being scores for each study. The meta-analyses were performed by computing standardised effect sizes using a random-effects model. Standardised effect sizes, sampling variance, and 95% confidence intervals were calculated for each study.

2.2.10 Calculating Study Effect Size and Sampling Variance

This systematic review and meta-analysis involved combining effect sizes from different research designs (e.g. randomised control trials, non-randomised control trials, repeated measures designs). Combining effect sizes across different designs requires that:

(1) the effect sizes must be transformed into a common metric;
(2) the effect sizes must estimate the same treatment effect;
(3) the meta-analysis involves design-specific estimates of sampling variance to reflect the precision of the effect size estimates.

(Morris & DeShon, 2002)

The initial stage for combining effect sizes involves transforming the effect sizes into a common metric (e.g. raw-score or change-score). Morris and DeShon (2002) suggest that the most appropriate metric to choose depends upon the analyst's research question/s. For example, this research involved considering differences between alternate treatments (e.g. PPI intervention group versus a control group) and therefore a raw-score metric is preferred (Morris & DeShon, 2002). In addition, it is important to consider how best to communicate results as "*a major advantage of the raw-score metric is its familiarity. The independent-groups effect size has been used in numerous meta-analyses, and most readers are familiar with its interpretation"* (Morris & DeShon, 2002, p111). As recommended by Morris and DeShon (2002), the following formulae were used to calculate a common raw score effect sizes for each study:

- Independent groups post-test raw score effect size metric:

$$(1) \quad - \qquad d = \frac{M_{Post,E} - M_{Post,C}}{SD_{Post,P}}$$

- Repeated measures pre-test-post-test raw score effect size metric:

$$(2) \quad - \qquad d = \frac{M_{post,E} - M_{pre,E}}{SD_{pre,E}}$$

- Independent groups pre-test post-test raw score effect size metric:

$$(3) \quad - \qquad d = \frac{M_{D,E}}{SD_{Pre,E}} - \frac{M_{D,C}}{SD_{Pre,C}}$$

Where: *M* = mean scores; *SD* = standard deviation; post = post-test; pre = pre-test; *P* = pooled standard deviation; *E* = experimental group; *C* = control group; *D* = pre–post difference.

The second stage of combining effect sizes requires the analyst to determine whether the different designs provide valid estimates of the intervention effect. For example, some research designs have more rigorous controls for sources of bias (e.g. properly executed RCTs) and therefore are able to provide a more accurate estimation of the treatment effect. Morris and DeShon (2002) suggest that it may not always be appropriate to combine results across research designs as the effect sizes may have differential susceptibility to bias. This can be mitigated conceptually, through evaluating risk of bias in individual studies, or empirically, through moderator analysis (Morris & DeShon, 2002). It was decided to evaluate the risk of bias in individual studies initially, as not all the studies included within the systematic review were suitable for moderator analysis (e.g. one or more necessary assumptions regarding the data were violated) (Jose, 2013), and then perform sensitivity and subgroup analysis to explore potential moderators. The methods used to conduct the risk of bias evaluations may be seen in Section 2.2.8.

The final stage of combining effect sizes requires the analyst to estimate the sampling variance for each study. Sampling variance refers to the extent to which a statistic is expected to vary from study to study as a function of the sampling error. Estimates of sampling error are used in a meta-analysis when computing the mean and testing the homogeneity of effect sizes. Sampling variance is largely a function of the sample size but is also influenced by the study design. Variance formulae have been developed for both the independent-groups effect size (Hedges, 1982) and repeated measures effect size (Gibbons, Hedeker, & Davis, 1993). As recommended by Morris and DeShon (2002), Borenstein, Hedges, Higgins and Rothstein (2011), and Pustejovsky (2014), the following formulae were used to calculate sampling variance for each study:

- Independent groups post-test sampling variance using the raw score effect size metric:

$$(4) \quad - \qquad \sigma^2 = \left(\frac{1}{\tilde{n}}\right)\left(\frac{N-2}{N-4}\right)[1 + \tilde{n}\delta_{IG}^2] - \frac{\delta_{IG}^2}{[c(N-2)]^2}$$

- Repeated measures pre-test post-test raw score sampling variance using the raw score effect size metric:

$$(5) \quad - \qquad \sigma^2 = \left[\frac{2(1-p)}{n}\right]\left(\frac{n-1}{n-3}\right)\left[1 + \frac{n}{2(1-p)}\delta_{IG}^2\right] - \frac{\delta_{IG}^2}{[c(n-1)]^2}$$

Where: n is the number of paired observations in a single-group pretest-posttest design; δ_{IG} is the population effect size in the raw-score metric; $c(df)$ is the bias function; $\tilde{n} = (n_E * n_C) / (n_E + n_C)$ is the product of the observations in both groups divided by the sum of the observations in both groups; N is the combined number of observations in both groups ($n_E + n_C$).

To calculate the sampling variance of the independent groups pre-test post-test designs, it is necessary to sum the variances of the two components to calculate the variance of the combined effect size (Becker, 1988). Therefore, the variance for each group was calculated using equation (5), and then summed.
The bias function $c(df)$ is approximated by the following (Hedges, 1982):

$$(6) \quad - \qquad c(df) = 1 - \frac{3}{4df - 1}$$

When the data are from an independent-groups post-test design, $\tilde{n} = (n_E * n_C) / (n_E + n_C)$ and $df = n_E + n_C - 2$. If the data are from a single-group pre-test post-test design, ñ is the number of paired observations, and $df = n - 1$.

The pre-test post-test correlation coefficient, *p*, may be estimated using the following formulae (Borenstein, Hedges, & Rothstein, 2007; Pustejovsky, 2014):

$$(7) \quad - \qquad p = \frac{SD_{pre}^2 + SD_{post}^2 - SD_D^2}{2 \times SD_{pre} \times SD_{post}}$$

$$(8) \quad - \qquad p = \frac{1 - SD_D^2}{2SD_P^2}$$

$$(9) \quad - \qquad p = \frac{d}{\sqrt{d^2 + a}}$$

Where:

$$(10) \quad - \qquad a = \frac{(n_1 + n_2)^2}{n_1 \times n_2}$$

$$(11) \quad - \quad SD_D = \sqrt{\frac{SD_1^2}{n_1} + \frac{SD_2^2}{n_2}}$$

2.2.11 Random-Effects Model Meta-Analysis

It is reasonable to assume that none of the studies included within the meta-analysis are identical (i.e. the true effect size will not be the same between studies) because of clinical differences (e.g. study participants, study settings, and intervention programme) and methodological differences (e.g. study design and extent of control over bias) (Israel & Richter, 2011; Sterne et al., 2011). Therefore, it was expected that there would be considerable heterogeneity. In addition, the magnitude of the impact of the multi-component PPIs may be moderated by group size, age of the participants, and other factors, which are likely to vary between studies. Therefore, a random-effects model

was chosen a priori to conduct the meta-analysis as recommended by Field (1999) and Borenstein et al. (2007). Within a random-effects model, the effect sizes may differ due to random error within studies as well as variation between studies. The combined effect size computed through a random-effects model produces conservative 95% confidence intervals, thereby reducing the likelihood of Type-II errors and, more importantly, allowing the researcher to make more appropriate inferences from the results (Sin & Lyubomirsky, 2009).

Within a random-effects model, it is assumed that there is a population of true effect sizes that are distributed around a mean (i.e. the combined effect) (Borenstein et al., 2007). In addition, it is necessary to account for two levels of sampling error: within studies variance and between studies variance. This can be achieved by computing the total variance (Q) and then subtracting the within-studies variance to calculate the between-studies variance (τ^2). The Q statistic represents the total variance and can be calculated using:

$$(12) \; - \quad Q = \sum_{i=1}^{k} w_i (T_i - \overline{T}_.)^2$$

Where Q is the total variance; w_i is the weighting given by the inverse of the study's variance; T_i is the squared deviation of each study; and $\overline{T}$ is the combined mean.

The between studies variance, τ^2, can be calculated using:

$$(13) \; - \quad \tau^2 = \begin{cases} \frac{Q - df}{C} & if Q > df \\ 0 & if Q \leq df \end{cases}$$

Where

$$(14) \; - \quad df = (number\ of\ studies) - 1$$

$$(15) \; - \quad C = \sum w_i - \frac{\sum w_i^2}{\sum w_i}$$

The adjusted weight assigned to each study is calculated using:

$$(16) \; - \qquad w_i^* = \frac{1}{v_i^*}$$

Where v^*_i is the variance within the study (v_i) added to the variance between the studies (τ^2).

$$(17) \; - \quad v_i^* = v_i + \tau^2$$

The weighted mean (i.e. the combined effect size) is calculated using:

$$(18) \; - \qquad \bar{T}_.^* = \frac{\sum_{i=1}^{k} w_i^* T_i}{\sum_{i=1}^{k} w_i^*}$$

The variance of the weighted mean is calculated using:

$$(19) \; - \quad v_.^* = \frac{1}{\sum_{i=1}^{k} w_i^*}$$

The standard error of the combined effect is the square root of the variance:

$$(20) \; - \qquad SE(\bar{T}_.^*) = \sqrt{v_.^*}$$

The 95% confidence intervals for the combined effect are calculated using:

$$(21) \; - \qquad Lower\ Limit^* = \bar{T}_.^* - 1.96 \times SE(\bar{T}_.^*)$$

$$(22) \; - \qquad Upper\ Limit^* = \bar{T}_.^* + 1.96 \times SE(\bar{T}_.^*)$$

The z-value can be calculated using:

$$(23) \; - \qquad Z^* = \frac{\bar{T}_.^*}{SE(\bar{T}_.^*)}$$

The two-tailed p-value can be calculated using:

$$(24) \; - \quad p^* = 2[1 - \phi(|Z^*|)]$$

Where Φ(Z) is the standard normal cumulative distribution function.

In order to explore heterogeneity, the I^2 statistic was calculated. This is the proportion of the observed variance within the meta-analysis that can be attributed to study differences, rather than sampling error. An I^2 value of 0% indicates that all variability in estimated effect sizes is due to sampling error within the studies. Higgins and Thompson (2002) suggest the following interpretations of I^2 values: 25% as low, 50% as medium, and 75% as high.

2.2.12 Risk of Bias Across Studies

The results of a systematic review and meta-analysis may be subject to publication bias and selective reporting because studies with trivial, non-statistically significant, or negative outcomes are often not published in peer-reviewed journals (Duval & Tweedie, 2000). Three methods were used to address this issue: inclusion of non-published studies, visual inspection of funnel plots, and utilising the Trim and Fill method (Rosenberg, 2005). Grey literature (e.g. from theses archives and databases) were included within the initial literature search. Risk of bias across studies (e.g. selective reporting within studies, publication bias) was assessed by evaluating a funnel plot (a graphical plot of intervention effect size against the inverse of the standard error) (Sterne et al., 2011). When publication bias is present, the studies are asymmetrically distributed around the pooled effect size. If asymmetry is observed in the funnel plot, the Trim and Fill method adjusts the pooled effect size by inputting 'missing studies' to restore the symmetry of the funnel plot (Bolier et al., 2013).

2.2.13 Additional Analyses

Sensitivity analyses were conducted to explore the degree to which the main conclusions of the meta-analysis were affected by the data contributed from individual studies (e.g. study design, results of risk of bias assessments). Subgroup analyses were conducted to evaluate whether the combined effect size varies in relation to certain characteristics (e.g. intervention administrator, intervention duration).

2.3 Results

The following section presents the results of the systematic review and meta-analysis that was conducted in order to address the research question.

2.3.1 Study Selection

A summary of the literature search results may be seen in Figure 1. The search of databases provided a total of 1399 citations after the removal of duplicates. All titles and abstracts were reviewed and 1306 studies were discarded because they evidently did not meet the eligibility criteria. The reference lists of the remaining papers were reviewed, which identified an additional 18 papers. A further 62 studies were discarded because they did not meet the eligibility criteria, the full text was unavailable or there was no English translation available. The full texts of the remaining 59 citations were scrutinised in greater detail. 37 studies did not meet the eligibility criteria and were discarded. 22 studies met the eligibility criteria and were included within the systematic review and meta-analysis. These 22 studies involved randomised control trials, non-randomised control trials, and repeated measures design studies.

2.3.2 Study characteristics

Characteristics of included studies:

Methodologies

The following studies were selected for review:

- Ten randomised control trials;
- Eight non-randomised control trials;
- Four repeated measures design.

Eight of the PPI programmes were administered by the researchers and/or research assistants, all of whom were psychologists or psychology students. Twelve of the interventions were delivered by teachers and school staff, all of whom had received training from the researchers. Two of the interventions were delivered via an online computer software program. The duration of the PPI programmes ranged from six weeks to forty-two weeks. Fourteen of the interventions were delivered once per week, five of the interventions were delivered twice per week, and one of the interventions was delivered once per fortnight. The duration of individual sessions ranged from thirty minutes to ninety minutes.

Participants

The included studies involved a total of 7352 participants. All of the interventions were administered within schools and educational institutions. The main inclusion criteria required school-aged children. The ages of the participants ranged from three years old to twenty-one years old[1].

Interventions

All trials involved multi-component PPIs (i.e. activities to develop personal characteristics such as gratitude, forgiveness, goal setting, and optimism). The most commonly occurring components were gratitude ($N = 19$), character strengths ($N = 18$), kindness ($N = 14$), and optimism/hope ($N = 15$). The interventions were conducted in Australia (6), USA (6), UK (3), Israel (3), Kuwait (1), Finland (1), Netherlands (1), and Portugal (1).

Outcomes

All studies measured a range of primary outcomes, such as positive affect, negative affect, satisfaction with life, well-being, and flourishing. The main outcome chosen to include within the analysis may be seen in Table 3 and was based upon known substantial correlates of well-being. The timing of outcome measures included pre-test, post-test, and follow-ups.

A summary of individual study characteristics may be found within Table 3.

[1] The study by Lambert et al. (2019) included participants who attended high school and were aged between 15-21. It was decided to include this study within the analysis since all participants attended secondary schooling.

Figure 1. PRISMA flow diagram of study selection

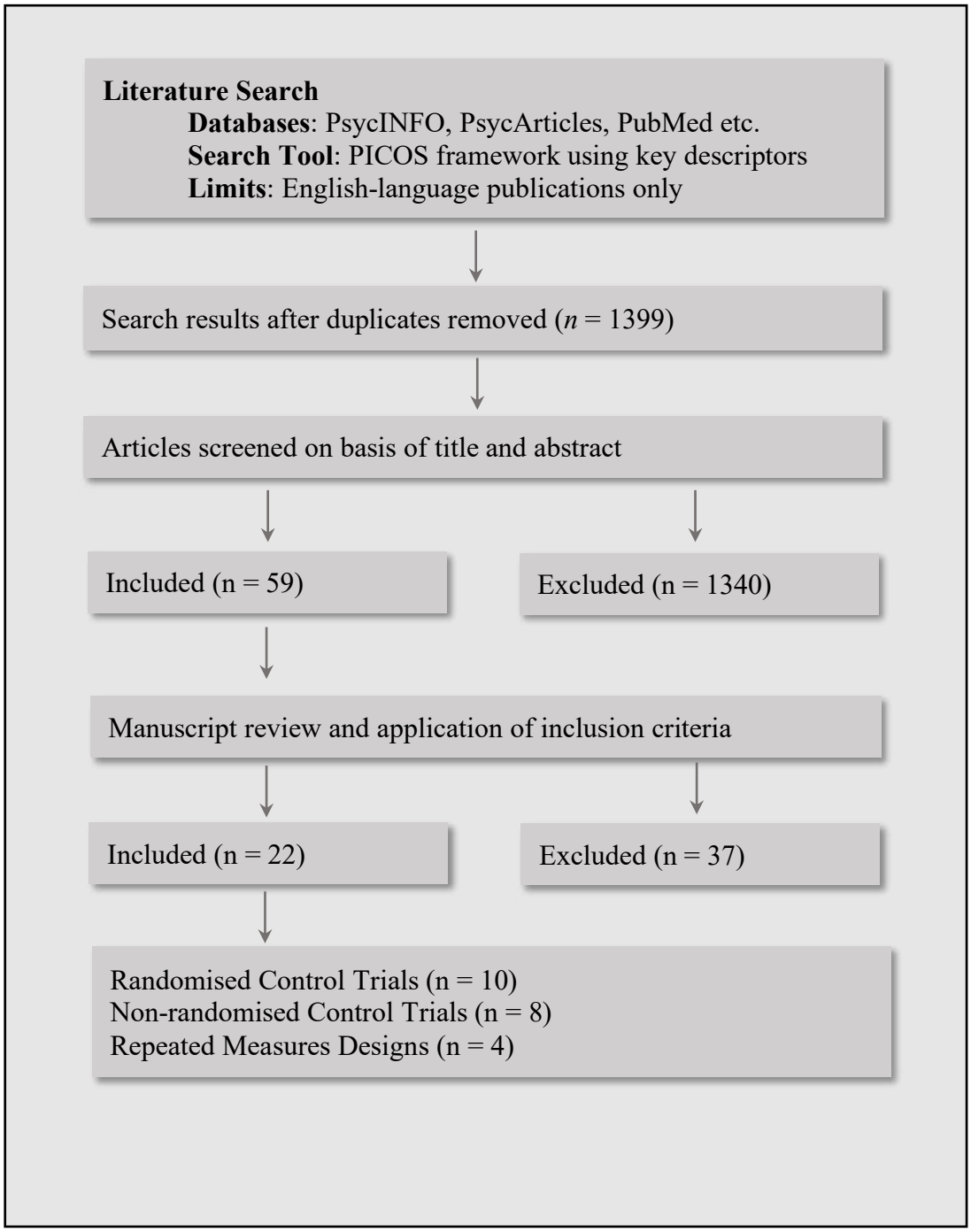


Table 3. Summary of study characteristics

Source	Population	Intervention	Comparison	Outcomes	Study Design
Bird, J. M. (2014) *Unpublished Thesis*	*N* = 86 Students aged 11-14 years old. Two Public Middle Schools. South Carolina, USA.	**Description:** Leadership and Young Professionals Program **PPI Components:** Gratitude, Character Strengths, Goal Setting, Social Problem-Solving Skills, Leadership and Professional Development. **Administrator:** Researcher and trained members of staff. **Duration:** Ten weeks. **Frequency:** 10 sessions, one session per week, 75 minutes per session. **Implementation Factors:** Standardised protocol for delivery, implementation checklist, 90%-95% treatment fidelity, follows SAFE guidelines.	Participants randomly assigned to wait list control group to participate in the treatment condition during the second semester.	**Measurement Frequency:** Measurements conducted pre-test and post-test. **Measurement Instruments:** BMSLSS CPSE GQ-6 PANAS-C SEI **Measurement Outcomes:** Subjective Well-Being	Randomised Control Trial
Boniwell, I., Osin, E. N., & Martinez, C. (2016).	*N* = 164 Students aged 11-12 years old.	**Description:** Personal well-being lessons. **PPI Components**: Positive Emotions, Positive Experiences, Positive Relationships, Optimism, Gratitude, Forgiveness, Kindness, Social Problem-Solving Skills, Character Strengths. **Administrator**: Trained teachers.	A secondary school from the same federation as the treatment school.	**Measurement Frequency**: Measurements conducted pre-test and post-test.	Non-Randomised Control Trial

Journal Article	Federation of Secondary Schools. London, UK.	**Duration**: Academic year. **Frequency**: 18 sessions in total, one session every two weeks, each session for 50 minutes. **Implementation Factors**: Teachers were trained for five days, discussions with the management team, presentations to all staff during INSET day, optional workshops for teachers, optional presentation for parents, follows SAFE guidelines.	Matched for socio-economic status.	**Measurement Instruments:** MSLSS SLSS PANAS-C **Measurement Outcomes:** Satisfaction with Life	
Burckhardt et al. (2015) *Journal Article*	*N* = 338 Students aged 12-18 years old. 4 High Schools. Australia	**Description:** Bite Back Intervention. **PPI Components:** Gratitude, Optimism, Flow, Meaning, Hope, Mindfulness, Character Strengths, Healthy Lifestyles, Positive Relationships. **Administrator:** Delivered online. Teacher facilitator. **Duration:** At least 6 hours. **Frequency:** At least 1 hour per week. **Implementation Factors:** Workbook was developed to guide students through the positive psychology exercises. After each session, participants emailed a copy of the workbooks to the researchers to determine programme adherence.	Participants were randomised by classes (block design). Participants in the control condition used a website and workbook similar to the treatment group. However, the content was not related to well-being or psychology.	**Measurement Frequency:** Measurements conducted pre-test and post-test. **Measurement Instruments:** DASS-21 SLSS SWEMWBS **Measurement Outcomes:** Flourishing	Randomised Control Trial

Burckhardt et al. (2016) *Journal Article*	*N* = 267 Students aged 15-18 years old. Independent High School. Sydney, Australia	**Description:** Strong Minds Intervention. **PPI Components:** Values, Kindness, Meaning, Emotional Acceptance, Social Relationships, Mindfulness, and Healthy Lifestyles. **Administrator:** The researcher and a research assistant. **Duration:** 3 months **Frequency:** 16 sessions in total, two 30-minute sessions each week. **Implementation Factors:** Administrator was an experienced psychologist. Intervention follows SAFE guidelines.	Participants in the control condition attended pastoral care classes. The length, duration, and total number of sessions was the same as the treatment group.	**Measurement Frequency:** Measurements conducted pre-test and post-test. **Measurement Instruments:** DASS-21 FS **Measurement Outcomes:** Flourishing	Randomised Control Trial
Elfrink, Goldberg, Schreurs, Bohlmeiier, & Clarke (2017) *Journal Article*	*N* = 184 Students aged 4 to 12 years old. Two Schools. Enschede, Netherlands	**Description:** Positive Education Programme. **PPI Components:** Unable to ascertain. However, the programme was based upon positive emotions, engagement, relationships, meaning, and accomplishment. **Administrator:** Trained members of school staff. **Duration:** Unknown **Frequency:** Unknown **Implementation Factors:** Four training sessions delivered to members of staff.	N/A	**Measurement Frequency:** Measurements conducted pre-test and post-test. **Measurement Instruments:** SDQ Kid KINDL-R Kiddy KINDL-R	Repeated Measures Design

				Measurement Outcomes: Flourishing	
Freire, Lima, Teixeira, Araújo, & Machado (2018) *Journal Article*	*N* = 99 Students aged 13-15 years old. Urban School. Portugal	**Description:** Challenge: To Be +. **PPI Components:** Positive Emotions, Character Strengths, Optimism, Optimal Experiences. **Administrator:** Research assistants. **Duration:** Two months **Frequency:** 8 sessions in total, One session per week, each session 90 minutes. **Implementation Factors:** Follows SAFE guidelines.	One class of students at the school who did not participate in the treatment condition.	**Measurement Frequency:** Measurements conducted pre-test and post-test. **Measurement Instruments:** PHCSCS RSES PWBSA LSS **Measurement Outcomes:** Satisfaction with Life	Non-Randomised Control Trial
Halliday, Kern, Garrett, & Turnbull (2019)	*N* = 143 Students aged 13 to 16 years old.	**Description:** Positive Education Pilot Programme. **PPI Components:** Positive affect, meaning, gratitude, optimism. **Administrator:** Trained teachers. Online component (MoodGYM). **Duration:** 2 months.	Existing student pastoral groups.	**Measurement Frequency:** Measurements conducted pre-test, post-test, and follow-up.	Non-Randomised Control Trial

Journal Article	High School. Australia.	**Frequency:** 9 sessions, one session per week. **Implementation Factors:** Teachers attended three training sessions. Resources provided by researchers.		**Measurement Instruments:** EPOCH CD-RISC 10 DASS 21 **Measurement Outcomes:** Happiness	
Hearon (2017) *Unpublished Thesis*	*N* = 128 Students aged 9 to 11 years old. Middle School. USA.	**Description:** Positive Psychology Programme. **PPI Components:** Gratitude, Kindness, Signature Strengths, Hope, Goal Setting. **Administrator:** Researcher and trained teachers. **Duration:** 10 weeks. **Frequency:** 10 sessions, each session 45 minutes. **Implementation Factors:** Teachers received training. Teacher and researcher co-facilitated sessions. Treatment integrity checklists throughout sessions. Treatment dosage calculated. Follows SAFE Guidelines.	Classes were randomly assigned to treatment and control group. Control group matched for ages and teaching modalities.	**Measurement Frequency:** Measurements conducted pre-test, post-test, and follow-up. **Measurement Instruments:** SLSS PANAS-C CASSS EvsD-S **Measurement Outcomes:** Life Satisfaction	Randomised Control Trial

Lambert, Passmore, Scull, Al Sabah, & Hussain (2019) *Journal Article*	*N* = 1031 Students aged 15 to 21 years old. 10 Secondary Schools. Kuwait.	**Description:** Bareec Program. **PPI Components:** Positive Affect, Kindness, Character Strengths, Goal Setting, Positive Relationships. **Administrator:** Trained teacher. **Duration:** 8 weeks. **Frequency:** One session per week, 15 minutes per session. **Implementation Factors:** Teachers received training and resources from the researchers. Follows SAFE guidelines.	Non-participating classes formed the control group.	**Measurement Frequency:** Measurements conducted pre-test, post-test. **Measurement Instruments:** SPANE FS SWLS **Measurement Outcomes:** Flourishing	Non-Randomised Control Trial
Madden, Green, & Grant (2011) *Journal Article*	*N* = 38 Students aged 10 to 11 years old. Independent Primary School.	**Description:** Strengths Coaching Programme. **PPI Components:** Character Strengths, Goal Setting, Hope, Optimism. **Administrator:** Trained teacher. **Duration:** 6 months. **Frequency:** 8 sessions, one session every two weeks, each sessions 45 minutes. **Implementation Factors:** Teacher received training. Follows SAFE guidelines.	N/A	**Measurement Frequency:** Measurements conducted pre-test, post-test. **Measurement Instruments:** BYI VIA CHS	Repeated Measures Design

	Sydney, Australia.			**Measurement Outcomes:** Engagement	
Manicavasagar et al. (2014) *Journal Article*	*N* = 235 Students aged 12 to 18 years old. Australia.	**Description:** Bite Back. Online Intervention. **PPI Components:** Gratitude, Flow, Optimism, Meaning, Hope, Mindfulness, Character Strengths, Positive Relationships, Healthy Lifestyles. **Administrator:** Online intervention. **Duration:** 6 weeks. **Frequency:** At least one hour per week. **Implementation Factors:** Intervention adherence measured by duration of exposure to the program during the course of the trial.	Participants in the control groups accessed websites that did not contain information related to positive psychology or well-being.	**Measurement Frequency:** Measurements conducted pre-test, post-test. **Measurement Instruments:** DASS-21 SWEMWBS **Measurement Outcomes:** Well-Being	Randomised Control Trial
Norrish (2010) *Unpublished Thesis*	*N* = 90 Students aged 14 to 17 years old.	**Description:** The full life intervention. **PPI Components:** Character Strengths, Engagement, Meaning, Gratitude, Kindness, Hope, Optimism, Goal Setting. **Administrator:** Trained school staff. **Duration:** Two weeks **Frequency:** One full day workshop, two weeks of practice activities.	Control group participated in the school's usual health program.	**Measurement Frequency:** Measurements conducted pre-test, post-test, follow-up. **Measurement Instruments:**	Randomised Control Trial

	Secondary School. Melbourne, Australia.	**Implementation Factors:** Researcher trained the school staff and provided resources. Follows SAFE guidelines.		SLSS SWEMWBS DASS-21 **Measurement Outcomes:** Life Satisfaction	
Putwain, Gallard, & Beaumont (2019) *Journal Article*	*N* = 534 Students aged 16-18 years old. College. UK.	**Description:** BePART. **PPI Components:** Gratitude, Mindfulness, Healthy Lifestyles, Goal Setting. **Administrator:** Trained school staff. **Duration:** 6 weeks. **Frequency:** 6 sessions, one session per week, one hour per session. **Implementation Factors:** Delivered as part of PSHE lessons. School-staff received training from the researchers.	Wait-list control group. Participants had normal Personal Social Health Education (PSHE) lessons.	**Measurement Frequency:** Measurements conducted pre-test, post-test, follow-up. **Measurement Instruments:** SWBS Adaptability Academic Buoyancy **Measurement Outcomes:** School-related Well-Being	Randomised Control Trial
Roth (2014)	*N* = 42	**Description:** Multi-component programme. **PPI Components:** Gratitude, Kindness, Character Strengths, Optimism, Hope.	Participants randomly assigned to a control group.	**Measurement Frequency:** Measurements	Randomised Control Trial

Unpublished Thesis	Students aged 11-12 years old. Middle School. USA.	**Administrator:** Researcher and research supervisor. **Duration:** 10 weeks. **Frequency:** 10 sessions, one session per week, one hour per session. Additional two booster sessions. **Implementation Factors:** Parents invited to an initial 60-minute session and four psychoeducation sessions. Treatment integrity checklist throughout parent component and treatment. Treatment adherence checked.		conducted pre-test, post-test, 5-week follow-up, 7-week follow-up. **Measurement Instruments:** BMSLSS BPM-Y SLSS PANAS-C **Measurement Outcomes:** Life Satisfaction	
Shoshani & Steinmetz (2014) *Journal Article*	*N* = 1038 Students aged 11-14. Middle Schools. Israel.	**Description:** Maytiv Programme. **PPI Components:** Gratitude, Character Strengths, Hope, Perseverance, Kindness, Mindfulness, Goal Setting. **Administrator:** Trained teacher **Duration:** Academic year (9 months). **Frequency:** 15 sessions, 2 hours per session. **Implementation Factors:** Teachers received training from researchers. Teachers received resources from researchers (e.g. class plans). School psychologist and counsellors	Control participants continued with regular curricula of social science lessons.	**Measurement Frequency:** Measurements conducted pre-test, post-test, follow-up, follow-up. **Measurement Instruments:** BSI RSE	Non-Randomised Control Trial

		checked randomly on implementation. Follows SAFE guidelines.		LSS LOT-R **Measurement Outcomes:** Life Satisfaction	
Shoshani et al. (2016) *Journal Article*	*N* = 2517 Students aged 11 to 14 years old. Middle Schools. Israel.	**Description:** Maytiv Programme. **PPI Components:** Gratitude, Character Strengths, Hope, Perseverance, Kindness, Mindfulness, Goal Setting. **Administrator:** Trained teacher. **Duration:** Academic year (9 months). **Frequency:** 15 sessions, one session every two weeks, 2 hours per session. **Implementation Factors:** Teachers received training from researchers. Teachers received resources from researchers (e.g. class plans). School psychologist and counsellors monitored and supported implementation. Follows SAFE guidelines.	Control participants continued with regular curricula.	**Measurement Frequency:** Measurements conducted pre-test, post-test, follow-up, follow-up. **Measurement Instruments:** SWLS PANAS-C Friends Subscale **Measurement Outcomes:** Life Satisfaction	Non-Randomised Control Trial
Shoshani & Slone (2017)	*N* = 315	**Description:** Maytiv Programme. **PPI Components:** Gratitude, Character Strengths, Hope, Perseverance, Kindness, Mindfulness, Goal Setting. **Administrator:** Trained teacher.	Control participants continued with regular curricula.	**Measurement Frequency:** Measurements	Non-Randomised Control Trial

Journal Article	Students aged 3 to 6 years old. Preschools. Israel.	**Duration:** Academic year (9 months). **Frequency:** 15 sessions, one session every two weeks, 2 hours per session. **Implementation Factors:** Teachers received training from researchers. Teachers received resources from researchers e.g. class plans. School psychologist and counsellors monitored and supported implementation. Follows SAFE guidelines.		conducted pre-test, post-test. **Measurement Instruments:** BMSSLS PANAS-C ASTE **Measurement Outcomes:** Life Satisfaction	
Suldo et al. (2014) *Journal Article*	*N* = 55 Students aged 10 to 11 years old. Middle School. USA.	**Description:** Multitargeted PPI intervention. **PPI Components:** Gratitude, Kindness, Character Strengths, Optimism, Hope. **Administrator:** Intervention delivered by school psychologists and doctoral students. **Duration:** 10 weeks. **Frequency:** One session per week, one hour per session. **Implementation Factors:** Follows SAFE guidelines.	Wait-list control group.	**Measurement Frequency:** Measurements conducted pre-test, post-test, follow-up. **Measurement Instruments:** BMSSLS PANAS-C SLSS YSR **Measurement Outcomes:**	Randomised Control Trial

				Life Satisfaction	
Suldo et al. (2015) *Journal Article*	*N* = 12 Student aged 8 to 9. Elementary School. USA.	**Description:** Multitargeted PPI intervention. **PPI Components:** Gratitude, Kindness, Character Strengths, Optimism, Hope. **Administrator:** Class teacher, school psychologist, and university research team co-facilitated but led by research team. **Duration:** 10 weeks. **Frequency:** One session per week, 40-60 minutes per session. **Implementation Factors:** Intervention fidelity checklist. Follows SAFE guidelines.	N/A	**Measurement Frequency:** Measurements conducted pre-test, post-test, follow-up. **Measurement Instruments:** SLSS PANAS-C MSLSS **Measurement Outcomes:** Global Life Satisfaction	Repeated Measures Design
Tunariu, Tribe, Frings, & Albery (2017)	*N* = 354 Students aged 11 to 12.	**Description:** iNEAR programme. **PPI Components:** Gratitude, Fairness, Well-being, Character Strengths, Self-efficacy, Positive Social Relationships, Existentialism. **Administrator:** Trained teachers.	Participants randomly allocated into control group.	**Measurement Frequency:** Measurements conducted pre-test, post-test.	Randomised Control Trial

Journal Article	London, UK.	**Duration:** Seven weeks. **Frequency:** Seven sessions, one session per week, one hour per session. **Implementation Factors:** Teachers provided with training and resources. Follows SAFE guidelines.	**Measurement Instruments:** PWBS SWEMWBS **Measurement Outcomes:** Well-Being	
Vuorinen, Erikivi, & Uusitalo-Malmivaara (2019) *Journal Article*	*N* = 253 Students aged 10-13 years old. Finland.	**Description:** Character Strengths Intervention. **PPI Components:** Character Strengths, Resilience, Kindness, Gratitude, Love, Hope, Compassion, Positive Social Relationships, Positive Emotions, Zest, Self-control. **Administrator:** Trained teachers. **Duration:** 16 weeks. **Frequency:** 16 sessions, one session per week, 45 minutes per session. **Implementation Factors:** Teachers received training from the researchers. Teachers received ongoing support and coaching. Teachers were provided with resources. Teachers were encouraged to share ideas and resources. Follows SAFE guidelines.	**Measurement Frequency:** Measurements conducted pre-test, post-test. **Measurement Instruments:** SUS SHS SCHI **Measurement Outcomes:** Subjective Happiness	Non-Randomised Control Trial.

Wingate, Suldo, & Peterson (2018) *Journal Article*	*N* = 17 Students aged 8-11 years old. Florida, USA.	**Description:** Well-Being Promotion Programme. **PPI Components:** Gratitude, Kindness, Character Strengths, Optimism, Hope. **Administrator:** Trained graduate and undergraduate psychology students. **Duration:** 10 weeks. **Frequency:** Ten sessions, one session per week. **Implementation Factors:** School psychologists encouraged buy-in by having meetings with teachers. Administrators collaborated and problem solved before each session. Follows SAFE guidelines.	N/A	**Measurement Frequency:** Measurements conducted pre-test, post-test. **Measurement Instruments:** BMSLSS MSLSS SLSS **Measurement Outcomes:** Satisfaction with Life	Repeated Measures Design

Note: The full name of each measurement instrument is provided in Table 4.

Table 4. Study measurement instruments

Name	Acronym	Name	Acronym
Affective Situations Test for Empathy	ASTE	Multi-dimensional Students' Life Satisfaction Scale	MSLSS
Beck Youth Inventory	BYI	Piers-Harris Children's Self-Concept Scale	PHCSCS
Brief Multi-dimensional Students' Life Satisfaction Scale	BMSLSS	Positive and Negative Affect Scale for Children	PANAS-C
Brief Problem Monitor Youth	BPM-Y	Psychological Well-Being Scale	PWBS
Brief Symptoms Inventory	BSI	Psychological Well-Being Scale for Adolescents	PWBSA
Child and Adolescent Social Support Scale	CASSS	Rosenberg Self-Esteem Scale	RSES
Children's Hope Scale	CHS	Scale of Positive and Negative Experience	SPANE
Children's Perceived Self-Efficacy Scale	CPSE	School Children's Happiness Scale	SCHS
Connor-Davidson Resilience Scale	CD-RISC 10	School Well-Being Scale	SWBS
Depression, Anxiety, and Stress Scale – Short Form	DASS-21	Short Warwick-Edinburgh Mental Well-Being Scale	SWEMWBS
EPOCH Measure of Adolescent Well-Being	EPOCH	Strengths and Difficulties Questionnaire	SDQ
Engagement versus Disaffection with Learning Student Report	EvsD-S	Strengths Use Scale	SUS
General Self-Efficacy Scale	GSES	Student Engagement Instrument	SEI
Gratitude Questionnaire	GQ-6	Students' Life Satisfaction Scale	SLSS
Flourishing Scale	FS	Subjective Happiness Scale	SHS
Life Orientation Test-Revised	LOT-R	Values in Action – Youth	VIA
Life Satisfaction Scale	LSS	Youth Self Report Form of the Child Behaviour Checklist	YSR

2.3.3 Risk of Bias Within Studies

Risk of bias within each study was evaluated through using the Cochrane Risk of Bias Tool (Higgins et al., 2016) shown in Table 5 and the EMMIE Framework (Johnson et al. 2015) shown in Table 6. The conclusions from these assessments were incorporated into the Weight of Evidence Framework (Gough, 2007) shown in Table 7 to provide an overall risk of bias evaluation for each study.

Table 5. Cochrane risk of bias tool: Assessment of the risk of bias in RCTs

Source	Selection Bias		Reporting Bias	Performance Bias	Attrition Bias	Detection Bias	Other Bias
	Random Sequence Generation	Allocation Concealment					
Bird (2014)	Unclear	Unclear	Low Risk	Unclear	Low Risk	Unclear	Unclear
Burckhardt et al. (2015)	Low Risk	Low Risk	High Risk	Low Risk	High Risk	Unclear	Unclear
Burckhardt et al. (2016)	Low Risk	Low Risk	Low Risk	High Risk	Low Risk	High Risk	Unclear
Hearon (2017)	Low Risk	High Risk	Low Risk	High Risk	Low Risk	High Risk	Unclear

Manicavasagar et al. (2014)	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Unclear
Norrish (2010)	Unclear	Unclear	Low Risk	Unclear	Low Risk	Unclear	Unclear
Putwain et al. (2019)	Low Risk	Low Risk	Low Risk	Unclear	Unclear	Low Risk	Unclear
Roth (2014)	Low Risk	Unclear	Low Risk	High Risk	Low Risk	Unclear	Unclear
Suldo et al. (2014)	Low Risk	Unclear	Low Risk	High Risk	Low Risk	High Risk	Unclear
Tunariu et al. (2017)	Unclear	Unclear	Low Risk	Unclear	Unclear	Unclear	Unclear

Table 6. EMMIE-E and EMMIE-Q ratings for individual studies

Source	Effect Size	Mechanisms / Mediators	Moderators / Contexts	Implementation	Economic
Bird (2014)	2	3	3	3	0
Boniwell et al. (2016)	3	2	2	3	0
Burckhardt et al. (2015)	2	2	2	2	0

Burckhardt et al. (2016)	3	2	2	2	0
Elfrink et al. (2017)	1	1	1	2	0
Freire et al. (2018)	3	2	2	1	0
Halliday et al. (2019)	2	1	2	3	0
Hearon (2017)	3	2	2	3	0
Lambert et al. (2019)	3	2	3	1	0
Madden et al. (2011)	1	2	1	1	0
Manicavasagar et al. (2014)	3	2	3	2	0
Norrish (2010)	2	2	1	1	0
Putwain et al. (2019)	2	2	1	1	0
Roth (2014)	2	2	2	3	0
Shoshani & Steinmetz (2014)	3	2	3	2	0
Shoshani et al. (2016)	3	3	3	3	0

Shoshani & Slone (2017)	3	3	3	3	0
Suldo et al. (2014)	2	2	1	2	0
Suldo et al. (2015)	2	2	2	3	0
Tunariu et al. (2017)	3	3	3	1	0
Vuorinen et al. (2019)	3	2	1	1	0
Wingate et al. (2018)	2	1	1	2	0

Table 7. Weight of evidence framework for individual studies

Source	Weight of Evidence A – Research Quality (transparency, accuracy, accessibility, specificity)	Weight of Evidence B – Research Design and Relevance (purposivity)	Weight of Evidence C – Focus (utility, propriety)	Weight of Evidence D – Overall
Bird (2014)	High (RCT with unclear risk of bias)	High (RCT multi-component PPI)	Medium (One middle school, 86 participants, aged 11-14, no ethical issues, at risk population)	Medium

Boniwell et al. (2016)	Medium (Non-randomised control with moderate risk of bias)	Medium (Non-randomised control trial multi-component PPI)	Medium (Two secondary schools, 164 participants, aged 11-12, no ethical issues)	Medium
Burckhardt et al. (2015)	High (RCT with moderate risk of bias)	High (RCT multi-component PPI. Delivered online)	High (Four high schools, 338 participants, aged 12-18 no ethical issues)	High
Burckhardt et al. (2016)	High (RCT with moderate risk of bias)	Medium (RCT ACT and multi-component PPI)	Medium (One high school, 46 participants, aged 15-18, no ethical issues)	Medium
Elfrink et al. (2017)	Low (Repeated measures design with high risk of bias)	Low (Within subjects design. Difficult to ascertain PPI components)	Medium (Two schools, 184 participants, aged 4-12, unknown ethical issues)	Low
Freire et al. (2018)	Medium (Non-randomised control with moderate risk of bias)	Medium (Non-randomised control trial multi-component PPI)	Medium (One school, 99 participants, aged 13-15, no ethical issues)	Medium
Halliday et al. (2019)	Medium	Medium	Medium	Medium

	(Non-randomised waitlist design with moderate risk of bias)	(non-randomised waitlist design multi-component PPI with online component)	(One school, 143 participants, aged 13-16, no ethical issues)	
Hearon (2017)	High (RCT with moderate risk of bias)	High (RCT multi-component PPI)	Medium (One elementary school, 128 participants, aged 9-11, no ethical issues)	High
Lambert et al. (2019)	Medium (Non-randomised control with moderate risk of bias)	Medium (Non-randomised control trial multi-component PPI)	Medium (Ten high schools, 1031 participants, aged 15-21, no ethical issues)	Medium
Madden et al. (2011)	Medium (Within subject design with moderate risk of bias)	Medium (Within subject multi-component PPI)	Medium (Primary school, 38 participants, aged 10-11, males, no ethical issues)	Medium
Manicavasagar et al. (2014)	High (RCT with low risk of bias)	High (RCT multi-component PPI. Delivered online)	High (Range of schools, 235 participants, aged 12-18, no ethical issues)	High
Norrish (2010)	High (RCT with moderate risk of bias)	High (RCT multi-component PPI)	Medium	High

			(One secondary school, 90 participants, aged 14-17, no ethical issues)	
Putwain et al. (2019)	High (RCT with moderate risk of bias)	Medium (RCT multi-component PPI and CBT and mindfulness)	Medium (One college, 534 participants, aged 16-18, no ethical issues)	Medium
Roth (2014)	High (RCT with moderate risk of bias)	High (RCT multi-component PPI)	Medium (One school, 42 participants, aged 11-12, no ethical issues)	High
Shoshani & Steinmetz (2014)	Medium (Longitudinal repeated measures design with control group and moderate risk of bias)	Medium (Repeated measures multi-component PPI)	Medium (Middle schools, 1038 participants, aged 11-14, no ethical issues)	Medium
Shoshani et al. (2016)	Medium (Longitudinal repeated measures design with control and moderate risk of bias)	Medium (Repeated measures multi-component PPI)	Medium (Middle schools, 2517 participants, aged 11-14, no ethical issues)	Medium
Shoshani & Slone (2017)	Medium (Non-randomised control with moderate risk of bias)	Medium (Non-randomised control multi-component PPI)	Medium (Preschools, 315 participants, aged 3-6, no ethical issues)	Medium

Suldo et al. (2014)	High (RCT with moderate risk of bias)	High (RCT multi-component PPI)	Medium (One school, 55 participants, aged 10-11, no ethical issues)	High
Suldo et al. (2015)	Medium (Within subjects design with moderate risk of bias)	Medium (Repeated measures multi-component PPI)	Medium (One elementary school, 12 participants, aged 8-9, no ethical issues)	Medium
Tunariu et al. (2017)	Medium (RCT with unclear risk of bias)	High (RCT multi-component PPI with existential theme)	Medium (One secondary school, 354 participants, aged 11-12, no ethical issues)	Medium
Vuorinen et al. (2019)	Medium (Quasi experimental control with moderate risk of bias)	Medium (Quasi experimental multi-component PPI)	Medium (Five Schools, 253 participants, aged 10-13, no ethical issues)	Medium
Wingate et al. (2018)	Medium (Repeated measures design with moderate risk of bias)	Medium (Repeated measures multi-component PPI with a quasi-targeted group)	Medium (One school, 17 participants, aged 8-11, no ethical issues)	Medium

2.3.4 Results of Individual Studies

Results of individual studies are presented within Table 8 with effect size estimates and 95% confidence intervals for each outcome of interest.

Table 8. Summary of study results

Source	Study Design	Outcome Measure	Number of Participants	Effect Size (95% Confidence Intervals)	Variance
Bird (2014)	RCT	Subjective Well-Being	86	0.73 [0.59 – 0.88]	0.49
Boniwell et al. (2016)	Non-RCT	Satisfaction with Life	164	0.22 [0.20 – 0.25]	0.03
Burckhardt et al. (2015)	RCT	Flourishing	338	0.22 [0.01 – 0.44]	0.01
Burckhardt et al. (2016)	RCT	Flourishing	(a) 19 (b) 27	0.88 [0.54 – 1.22] 0.18 [0.10 – 0.26]	0.57 0.04
Elfrink et al. (2017)	Repeated Measures Design	Emotional Well-Being	(a) 56 (b) 124	1.81 [1.33 – 2.30] 0.16 [0.13 – 0.19]	3.41 0.03
Freire et al. (2018)	Non-RCT	Satisfaction with Life	99	0.42 [0.32 – 0.52]	0.26
Halliday et al. (2019)	Non-RCT	Happiness	113	-0.06 [-0.15 – 0.03]	0.23
Hearon (2017)	RCT	Satisfaction with Life	128	-0.14 [-0.19 - -0.09]	0.08
Lambert et al. (2019)	Non-RCT	Flourishing	1031	0.14 [0.13 – 0.15]	0.01
Madden et al. (2011)	Repeated Measures Design	Engagement (Flow)	38	0.40 [0.27 – 0.53]	0.17
Manicavasagar et al. (2014)	RCT	Well-Being	154	0.42 [0.34 – 0.50]	0.28
Norrish (2010)	RCT	Well-Being	44	0.25 [0.19 – 0.31]	0.04

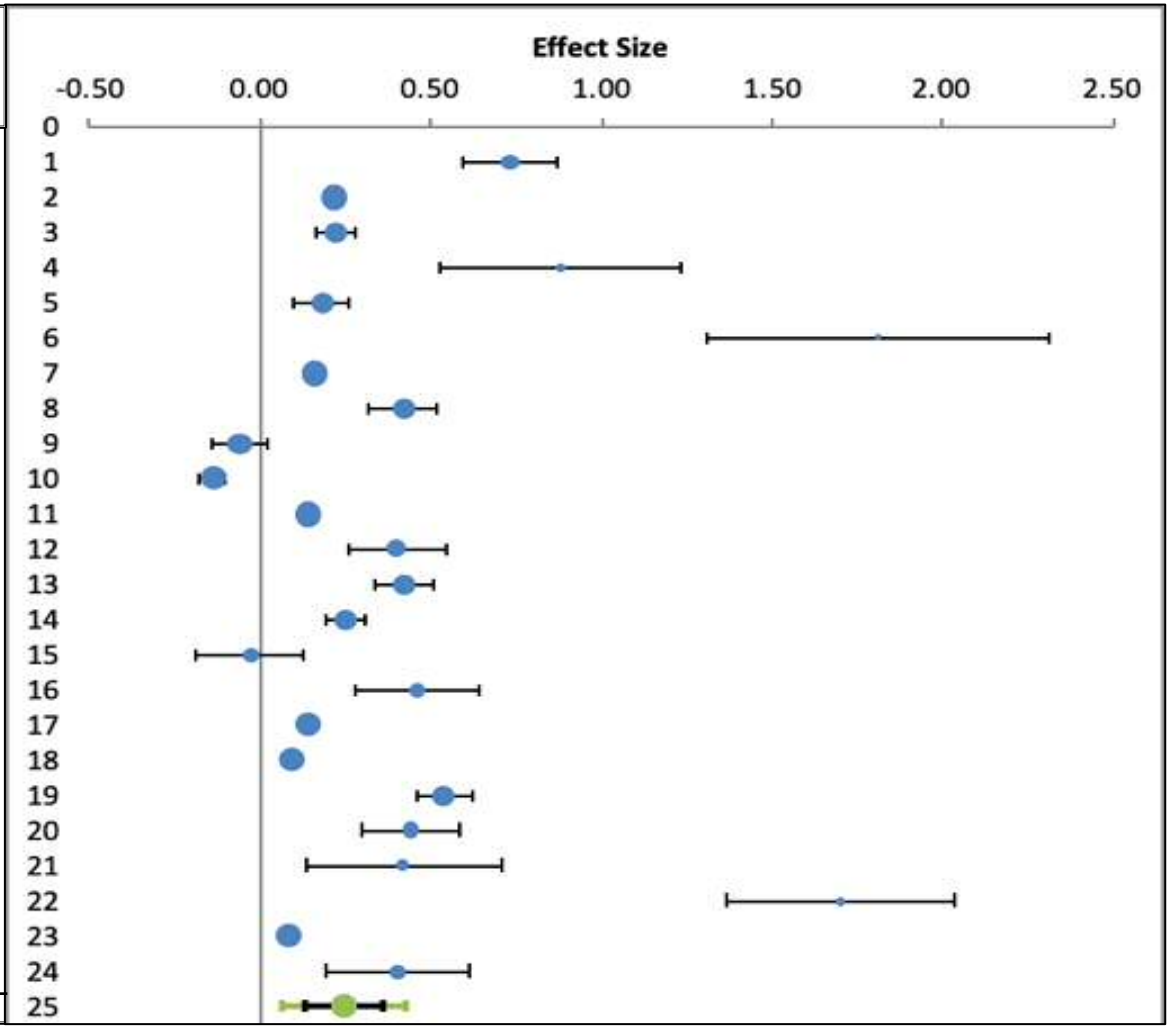
Putwain et al. (2019)	RCT	School-Related Well-Being	537	-0.03 [-0.18 – 0.13]	3.48
Roth (2014)	RCT	Satisfaction with Life	42	0.46 [0.28 – 0.64]	0.36
Shoshani & Steinmetz (2014)	Non-RCT	Satisfaction with Life	1038	0.14 [0.13 – 0.16]	0.06
Shoshani et al. (2016)	Non-RCT	Satisfaction with Life	2341	0.09 [0.085 – 0.092]	0.009
Shoshani & Slone (2017)	Non-RCT	Satisfaction with Life	315	0.54 [0.47 – 0.60]	0.40
Suldo et al. (2014)	RCT	Satisfaction with Life	40	0.44 [0.31 – 0.57]	0.18
Suldo et al. (2015)	Repeated Measures Design	Global Satisfaction with Life	12	0.42 [0.16 – 0.68]	0.21
Tunariu et al. (2017)	RCT	Well-Being	354	1.70 [1.37 – 2.03]	10.03
Vuorinen et al. (2019)	Non-RCT	Subjective Happiness	235	0.08 [0.06 – 0.10]	0.03
Wingate et al. (2018)	Repeated Measures Design	Global Life Satisfaction	17	0.40 [0.19 – 0.60]	0.19

2.3.5 Syntheses of Results

Outcome data were available for all twenty-two trials. The forest plot in Figure 2 shows the individual and combined analyses. In the pooled analysis, multi-component PPIs were associated with a significant increase in participant well-being (combined effect size = 0.25, CIs = [0.13 – 0.36], $p < 0.001$). The value of 0.25 represents a small positive effect size (Sullivan & Feinn, 2012). There was significant evidence of heterogeneity ($I^2 = 97.9\%$, $p < 0.001$), indicating substantial variability across study results included within the meta-analysis (Higgins, Thompson, Deeks, & Altman, 2003). These findings support the appropriateness of a random-effects model within the meta-analysis and suggest that conclusions regarding the findings may be applicable to other populations of children and young people who were not directly represented in the studies within this analysis (Cook, Williams, Guerra, Kim, & Sadek, 2010; Renshaw & Olinger-Steeves, 2016).

Figure 2. Forest plot of individual and combined analyses

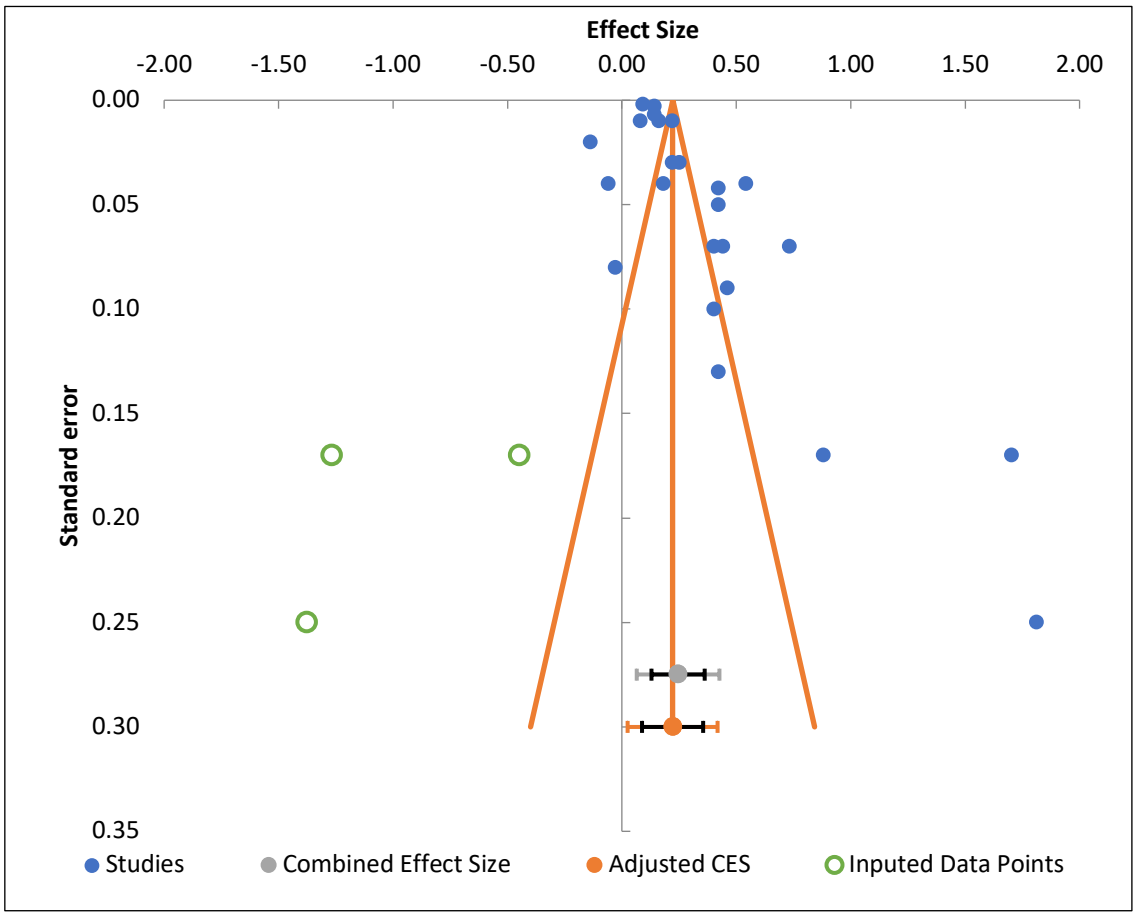
Source	Effect Size (95% CIs)
Bird (2014)	0.73 (0.59 - 0.88)
Boniwell et al. (2016)	0.22 (0.20 - 0.25)
Burckhardt et al. (2015)	0.22 (0.01 - 0.44)
Burckhardt et al. (2016)	0.88 (0.54 - 1.11)
	0.18 (0.10 - 0.26)
Elfrink et al. (2017)	1.81 (1.33 - 2.30)
	0.16 (0.13 - 0.19)
Freire et al. (2018)	0.42 (0.32 - 0.52)
Halliday et al. (2019)	-0.06 (-0.15 - 0.03)
Hearon (2017)	-0.14 (-0.19 - -0.09)
Lambert et al. (2019)	0.14 (0.13 - 0.15)
Madden et al. (2011)	0.40 (0.27 - 0.53)
Manicavasagar et al.	0.42 (0.34 - 0.50)
Norrish (2010)	0.25 (0.19 - 0.31)
Putwain et al. (2019)	-0.03 (-0.18 - 0.13)
Roth (2014)	0.46 (0.28 - 0.64)
Shoshani & Steinmetz	0.14 (0.13 - 0.16)
Shoshani et al. (2016)	0.09 (0.085 - 0.092)
Shoshani & Slone	0.54 (0.47 - 0.60)
Suldo et al. (2014)	0.44 (0.31 - 0.57)
Suldo et al. (2015)	0.42 (0.16 - 0.68)
Tunariu et al. (2017)	1.70 (1.37 - 2.03)
Vuorinen et al. (2019)	0.08 (0.06 - 0.10)
Wingate et al. (2018)	0.40 (0.19 - 0.60)
Combined Analysis	0.25 (0.13 - 0.36)



2.3.6 Risk of Bias Across Studies

Strong evidence of heterogeneity was observed ($I^2 = 97.9\%$, $p < 0.001$). To explore this heterogeneity, a funnel plot was drawn. The funnel plot showed evidence of considerable asymmetry (see Figure 3). Therefore, the Trim and Fill method was used to calculate a bias-adjusted combined effect size with corresponding 95% prediction intervals by inputting three additional data points (Duval & Tweedie, 2000; Hak, Rhee, & Suurmond, 2016). Results demonstrated that PPIs continued to be associated with a positive increase in participant well-being (bias-adjusted combined effect size = 0.22, CIs = [0.09 – 0.36]). However, the significant heterogeneity indicated that additional analyses were required.

Figure 3. Funnel plot



2.3.7 Additional Analyses

Sensitivity analyses were conducted according to study design, sample size, and risk of bias assessments. Results may be seen in Table 9. Analyses of variance demonstrated that the benefits of multi-component PPIs were greater in studies that utilised randomised control trials compared to non-randomised control trials and repeated

measure design studies ($p = 0.016$), and in smaller trials when compared to large trials ($p < 0.001$). However, the benefits of multi-component PPIs were non-significant when comparing high quality trials to moderate/low quality trials ($p > 0.05$).

Table 9. Summary of sensitivity analysis

Factor	Combined Effect Size	I^2
RCT Only	0.43 [0.11 – 0.75]	97.88%
High Quality Trials	0.27 [0.03 – 0.51]	98.23%
Large Sample Size ($N > 100$)	0.16 [0.02 – 0.31]	98.54%

Subgroup analyses were performed by conducting significance testing of differences in effect sizes between subgroups. Results may be seen in Table 10. Seven potential moderators were explored based upon findings from previous research (e.g. Durlak et al., 2011) and also characteristics of the studies included within the meta-analysis. Subgroup analyses were conducted according to intervention administrator (researchers, trained teachers, or online), educational setting (primary or secondary aged children), programme fidelity (e.g. following SAFE guidelines), whether school-staff received training, intervention duration, intervention frequency, and intervention session length. Interventions delivered by researchers (0.41) were significantly more effective than interventions delivered by teachers who had received training (0.17) when online administration was excluded from the analysis ($p = 0.05$). However, a large degree of heterogeneity remained. Analysis of variance demonstrated no other significant between-group differences. Univariate meta-regression showed no significant difference in well-being after allowing for the effect of intervention duration, intervention frequency, or intervention session length.

Table 10. Summary of subgroup analysis

Subgroup	Combined Effect Size	I^2
Intervention Administrator		
Researcher/s	0.41 [0.19 – 0.63]	97.67%
Teachers Who Had Received Training	0.21 [0.05 – 0.37]	98.34%

Delivered Online	0.19 [-0.40 – 0.79]	97.14%
Educational Setting		
Primary	0.34 [0.08 – 0.60]	98.42%
Secondary	0.22 [0.09 – 0.35]	97.86%
Programme Fidelity		
Followed SAFE Guidelines	0.25 [0.11 – 0.39]	95.38%
No SAFE Guidelines	0.20 [-0.10 – 0.50]	98.27%
Staff Training		
Staff Received Training	0.20 [0.04 – 0.35]	98.38%
Staff Did Not Receive Training	0.39 [0.24 – 0.54]	85.84%

2.4 Discussion

The following section provides a summary of the evidence from the meta-analysis and systematic review. In addition, a commentary is provided on the extent to which the study has provided an answer to the research question. Strengths and limitations of the study are then examined. The section concludes with a discussion regarding implications for EPs and recommendations for future research.

2.4.1 Summary of Evidence

Evaluating the effectiveness of interventions is essential to ensure that EPs are engaging in evidence-based practice (Rousseau & Gunia, 2016). Therefore, conducting highly robust methods of evaluation and synthesis, such as systematics reviews and meta-analyses, are extremely important. Thus far, there have been a small number of systematic reviews and meta-analyses regarding the use of PPIs to increase well-being and decrease negative symptoms (e.g. Bolier et al., 2013; Renshaw & Olinger-Steeves, 2016; Sin & Lyubomirsky, 2009), however there has not been a synthesis of the research evidence regarding the use of multi-component PPIs in schools. Therefore, the current study synthesised the research evidence to explore the effectiveness of multi-component PPIs in schools to promote the well-being of children and young people.

Overall, the evidence appears to be sufficiently robust to conclude that multi-component PPIs are somewhat effective at supporting the psychological well-being of children and young people in schools, thereby addressing the initial research question. However, it is

worthwhile noting that examination of the lower bound of the bias-adjusted combined effect size confidence intervals (0.09) (as recommended by Hak et al., 2016) suggests that the effectiveness of these interventions may not be substantial. This is a potentially important finding as positive psychology appears to have a valid theoretical basis for supporting well-being (e.g. a focus on developing a range of positive skills and competences) and there exists widespread support for the use of PPIs within educational institutions (e.g. Seligman, Ernst, Gillham, Reivich, & Linkins, 2009; Shankland & Rosset, 2017; Waters, 2011). It is possible that this synthesis of the research findings did not find stronger evidence to substantiate the use of PPIs due to such things as biases within the included studies, however it is also possible that positive psychology may not be a thoroughly robust psychological framework for understanding and promoting well-being. For example, a number of authors have criticised positive psychology for being overly content focused (e.g. pursuing positive emotions) and not giving sufficient attention to contextual factors (Becker & Maracek, 2008; Lomas, 2016). Ciarrochi et al. (2016) argue that well-being interventions should be contextual, adequately address negative affect and experiences, and should be less focused on content and instead promote flexible, values consistent behaviours. In addition, it is important to note that none of the studies included within this analysis considered or reported the economic costs of implementing PPIs. Therefore, questions remain regarding whether the economic and material costs of conducting multi-component PPIs are ultimately worthwhile, particularly given that these interventions may not have a substantial impact upon young people's feelings, cognitions, and behaviours in the real world.

Results of the meta-analysis demonstrated a large degree of heterogeneity, which was to be expected considering the diversity of the included studies (e.g. there were between-study differences in methodological design, participants, outcome measures, and components within the intervention programmes) (Sterne et al., 2011). Nonetheless, it is important that the heterogeneity is investigated and taken into account within the interpretation of the results of the meta-analysis (Higgins et al., 2003). Heterogeneity was explored through sensitivity analysis, subgroup analysis, and univariate meta-regression. Sensitivity analyses revealed that the benefits of multi-component PPIs were greater in studies that utilised randomised control trials compared to non-randomised control trials and repeated measure design trials, suggesting that research bias may have underestimated the effect size within some studies (Pannucci & Wilkins, 2010). In

addition, smaller trials demonstrated greater benefits when compared to large trials, possibly due to sampling bias within smaller studies and leading to an overestimation of effect size (Lin, 2018). However, the magnitude of the effect size did not appear to be substantially influenced by sensitivity analyses and therefore the original model may be considered relatively robust. Subgroup analyses and univariate meta-regression analyses revealed that interventions delivered by psychologists (i.e. the researcher/s) were more effective than interventions delivered by trained school staff. However, a large degree of heterogeneity remained evident after accounting for a number of factors and therefore between-study differences cannot be explained by this moderator alone. This suggests that there remains a significant degree of variation between studies that could be explained by a number of other moderator variables (Borenstein et al., 2011). In addition, it was not possible to conduct further exploratory moderator analyses due to lack of methodological detail within the primary studies. Therefore, whilst conclusions regarding the findings from this analysis may be applicable to other populations of children and young people who were not directly represented in the studies within this analysis (Cook et al., 2010; Renshaw & Olinger-Steeves, 2016), as previously indicated, EPs may wish to be cautious when considering applicability in the field and consideration should be given to additional factors which may impact upon implementation effectiveness.

2.4.2 Limitations

Outcome level: The systematic review and meta-analysis detailed here provide an estimation of the effectiveness of PPIs by combining data across studies and thereby providing a more robust estimate of intervention effectiveness than is possible within a single study. However, the main limitation of this meta-analysis is that the participant population, intervention programme, and measured outcomes are not identical across the studies. For example, there is no absolute consensus regarding the constituent components of a PPI, yet this is important when determining the studies to include within a meta-analysis. In addition, the outcomes and measuring instruments vary across studies. Previous positive psychology meta-analyses have synthesised a range of outcome measures correlated with well-being, such as happiness, life satisfaction, and positive affect (e.g. Bolier et al., 2013; Hendriks et al., 2019). As a result of these clinical and methodological differences between studies, the analyses demonstrate significant heterogeneity and therefore the calculated combined effect size may not be ecologically valid within all educational contexts.

Review level: The review of the primary studies consistently raised issues regarding the varied reporting of methodological designs and study results. For example, none of the studies with pre-post designs reported pre-post correlations that are required when calculating precise individual study effect sizes and sampling variances (Morris & DeShon, 2002). Therefore, pre-post correlation coefficients had to be estimated using appropriate formulae (Borenstein et al., 2007; Pustejovsky, 2014).

Study level: The quality of the included studies varied. For example, only ten randomised control trials were included within the analysis. Randomisation was adequate in four of these studies, however six of the studies did not provide sufficient detail of randomisation procedures, which could lead to over-estimation of treatment effects. Though it is worth noting that further analyses did not identify an association between study quality and intervention effectiveness, and the effect size in favour of PPIs remained statistically significant when excluding studies that were deemed to be less than high quality.

Analysis level: It was not possible to conduct multivariate meta-regression and explore interaction effects due to the insufficient methodological detail provided within the included studies and also due to the scope and resource requirements of this research. However, conducting multivariate meta-regression may have revealed a number of additional contextual moderators. For example, the effectiveness of PPIs within specific settings (primary schools vs. secondary schools) may be moderated by intervention administrator (teacher vs. researcher vs. online) and intervention duration. Further exploration of moderators would provide important information regarding how best to implement effective interventions.

2.4.3 Implications

Implications for EP's practice: Results from this study suggest that EPs can use PPIs in schools as an evidence-based approach to support the well-being of children and young people. However, there are a number of caveats to consider. For example, the effectiveness of PPIs does not appear to be substantial, there appear to be a number of moderating factors that may influence intervention efficacy, and there has been no exploration of the cost effectiveness of PPIs which must be considered within the current socio-economic context of economic hardship and budgetary restrictions within

the UK (British Medical Association, 2016). It is then questionable whether these interventions are worthwhile once one considers the potential economic costs and resources required for effective implementation. As a result, EPs may wish to make use of multi-component PPIs with some degree of caution or may wish to utilise alternative evidence-based well-being approaches that are known to be cost-effective (see CASEL, 2019 for further details). Furthermore, a number of systematic reviews have highlighted the important factors that influence intervention effectiveness (e.g. adopting a whole-school approach, high implementation quality, and significant programme fidelity) (Banerjee et al., 2014; Barry & Dowling, 2015; Durlak et al., 2011). Therefore, it is critical that EPs consider not only the overall effectiveness of an intervention but also how best to support schools to implement these types of interventions successfully, particularly given that these factors may moderate efficacy (for further discussion and exploration of effective implementation, see Wright, 2020b).

Implications for future research: Future research regarding PPIs should focus upon conducting high quality studies in schools (such as RCTs) with particular care given to reporting and exploring moderating factors. In addition, it is important that the economic costs and benefits are explored in order to determine whether these types of interventions are not only effective but are also an efficient use of resources. Future synthesis of research findings should focus upon exploring contextual moderators and determining factors that influence intervention effectiveness. Furthermore, an important next step for future research would be the comparison of multi-component PPIs against other evidence-based well-being interventions (e.g. Social and Emotional Aspects of Learning) in order to compare relative effectiveness, cost-effectiveness, and to ensure that EPs are providing the best possible outcomes for their service users. Finally, and perhaps most significantly, evaluating the effectiveness of intervention programmes and approaches fails to address the practical methods by which EPs can best implement well-being interventions in schools, and therefore it is crucial that procedures to support implementation are also explored (see Chatwin, 2018; Wright, 2020b).

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Implementing Effective Positive Psychology Interventions to Support the Well-Being of Young People in Schools: A Q Study of Educational Psychologists' Perceptions Regarding Effective Implementation

EMPIRICAL PAPER 2

By David Wright

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ABSTRACT

Context: Educational Psychologists (EPs) are helping professionals who are able to promote the psychological well-being of young people within school systems. Positive psychology provides a well suited framework for EPs to use when supporting well-being. However, there are few studies which have explored the practical and pragmatic procedures that EPs should adopt to support schools best to implement well-being interventions and approaches. It is essential that consideration is given to how EPs can best support schools to implement well-being interventions effectively, as factors such as implementation quality have been shown to be vital to ensure intervention efficacy.

Objectives: To explore how EPs can best support schools with the effective implementation of positive psychology interventions (PPIs) to promote the well-being of children and young people.

Methodology: A Q study was conducted to explore the perceptions of EPs regarding the effective implementation of PPIs in schools. Participants were required to sort 40 statements regarding possible procedures into a forced choice quasi-normal distribution. These statements were derived from the research literature regarding effective implementation, findings from a meta-analysis by Wright (2020a), informal discussions with practising EPs, and then refined through two pilot studies.

Results: 24 EPs gave their views on the most practical and effective methods by which to support schools to implement PPIs. Q sort analysis revealed that participants significantly loaded onto four factors: *working strategically*, *working systemically*, *supporting a whole-school approach*, and *providing training and supporting high-quality implementation*.

Conclusions: Results from the Q study are congruent with the research literature (e.g. supporting a whole school approach, supporting high quality implementation) and provide some practical and pragmatic suggestions which EPs can use to facilitate the effective implementation of well-being interventions in schools.

Keywords: Positive Psychology, Well-Being, Multi-component Positive Psychology Interventions, PPIs, Q Methodology

3.1 Introduction

3.1.1 Supporting Well-Being in Schools

A recent research paper published by the Department for Education [DfE] (2019) states that:

> '*All children and young people (CYP) deserve to have good wellbeing, and grow up equipped with the tools they need to understand and support their mental wellbeing as they move into adulthood. Whilst there is growing awareness of the importance of wellbeing and the majority of children are happy with their lives, it remains the case that many are not.*' (DfE, 2019, p.5).

The DfE (2019) also contend that the school environment has a particularly strong link to young people's wellbeing and that school professionals, among others, should consider how best to support young people to develop appropriate social and emotional competences (see also Coverdale & Long, 2015; DfE, 2016; Greenberg, 2010; Oberle, Domitrovich, Meyers, & Weissberg, 2016). EPs are widely regarded as helping professionals who possess the psychological skills and understanding of educational contexts necessary to support schools with well-being (Greig, MacKay, Roffey, & Williams, 2016). However, despite this widespread recognition, there are very few studies which have explored the precise psychological approaches, practical strategies and pragmatic procedures that EPs should adopt to support schools best to implement the well-being agenda (Chatwin, 2018).

Research evidence demonstrates that well-being approaches which improve positive social and emotional competencies within young people are more beneficial than those which aim only to alleviate negative outcomes (e.g. Barry & Dowling, 2015; Barry & Jenkins, 2007; Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004; Durlak et al., 2011; O'Connell, Boat, & Warner, 2009; Weare & Nind, 2011). Positive psychology is the study and development of positive emotions, human flourishing, and personal characteristics (Seligman, 2002), and therefore may provide a suitable psychological framework for EPs to support schools with well-being. Positive psychology interventions (PPIs) have been successfully implemented within educational institutions to promote and develop the well-being of children and young people (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009; Shankland & Rosset, 2017; Waters, 2011). Wright (2020a) conducted a meta-analysis of the research evidence regarding the use of multi-component PPIs within schools and demonstrated that these types of interventions

appear to improve the well-being of young people. However, Wright (2020a) also cautioned that the effect size appears to be relatively small and noted that a number of factors may moderate the effectiveness of PPIs, such as implementation quality. Therefore it is important that further consideration is given to moderating factors that facilitate the effective implementation of well-being interventions.

3.1.2 Supporting the Effective Implementation of Well-Being Interventions

Syntheses of the research evidence have revealed a number of influential factors that appear to moderate the effectiveness of skills-based well-being interventions when implemented within educational institutions (Barry & Dowling, 2015; CASEL, 2019; Durlak et al., 2011; Dusenbury et al., 2005; Humphrey, Lendrum, & Wigelsworth, 2013; Weare & Nind, 2011). For example, Durlak et al. (2011) found that effective intervention programmes include appropriately sequenced and connected activities, active forms of learning, the focused development of skills, and explicitly target specific social and emotional skills. Barry and Dowling (2015) and Weare and Nind (2011) argue that effective implementation should involve a whole school approach in which interventions and competences are integrated within the cultures and practices of the school and should include an understanding of the various contextual challenges faced by the young people. Durlak et al. (2011) and Dusenbury et al. (2005) assert that schools must ensure the proper implementation of well-being programmes (including effective monitoring, implementation fidelity, evaluation) and recommend that external professionals, such as EPs, can assist schools by providing advice and training regarding policies, professional development, and technical assistance. Humphrey et al. (2013) and Weare and Nind (2011) suggest that it is important for schools to involve families and communities within approaches to ensure 'buy in' to well-being programmes before implementation. These factors generally appear to involve the explicit teaching of skills to enhance social and emotional competences (such as is the case with PPIs), adopting a whole school approach to well-being, supporting high quality implementation, and the importance of organisational and cultural strategies that promote well-being (CASEL, 2019; Durlak et al., 2011; Weare & Nind, 2011).

A review of the research evidence suggests that the efficacy of well-being interventions and the subsequent impact upon positive outcomes are significantly influenced by the quality of implementation (e.g. Durlak, 2016; Durlak et al., 2011; Oberle et al., 2016). However, Wanless and Domitrovich (2015) caution that facilitators and barriers to

successful implementation are not always given the required attention before well-being interventions are adopted within schools. As a result, desired positive outcomes are not consistently being achieved due to the haphazard implementation quality of school-based well-being interventions (Durlak et al., 2011; Greenberg, 2010). Despite these concerns, there is a noted lack of research regarding the particular strategies that EPs might utilise to best support schools to implement well-being interventions effectively (Chatwin, 2018). In addition there has been a paucity of research that has allowed EPs to express their views regarding this important issue. Therefore, it is crucial that further consideration is given to how EPs may use their psychological skills, expertise, and understanding of educational contexts to support schools with the effective implementation of well-being interventions.

3.1.3 Summary and Research Question

Research evidence suggests that positive psychology may provide an effective psychological framework for EPs to utilise when supporting well-being in schools (Wright, 2020a). However, it is important that consideration is also given to how EPs can best support schools to implement these types of interventions effectively, as factors such as implementation fidelity have been shown to moderate desired outcomes. It is important that EPs have both an evidence-based and pragmatic approach to professional practice. There has been a notable lack of research that has encouraged EPs to express their views regarding this topic or that has generated a number of practical and pragmatic procedures that can facilitate EP's current practices. This led to the following research question:

- *Research Question: How can EPs best support schools to implement effective positive psychology well-being interventions?*

3.2 Q Methodology

The following section describes the Q methodology used in this study to address research question 2. The section begins by outlining the research design, participant sample, development of the Q statements, the research procedure, and relevant ethical considerations. The section concludes with a description of the methods used to analyse and interpret the research data.

3.2.1 Research Design – Q Methodology

Q methodology was chosen as a suitable method for exploring EPs perceptions regarding the effective implementation of positive psychological interventions in schools. Q methodology involves a series of precise steps which ultimately measure subjective viewpoints regarding a chosen topic (Wright, 2013). The methodological steps are as follows:

- Development of a collection of statements regarding the research subject in question;
- Identification of participants;
- Rank-ordering of the statements by the participants (called the Q sort);
- Data analysis and interpretation of factor solutions.

Q methodology explores differing perspectives and allows each individual to define and understand a concept. Analysis of the data generated within Q methodology identifies a small number of shared perspectives that account for the majority of the variance in the original data. Interpretation of these perspectives can reveal EP viewpoints regarding the effective implementation of PPIs in schools to support well-being.

3.2.2 Q Methodology – Process

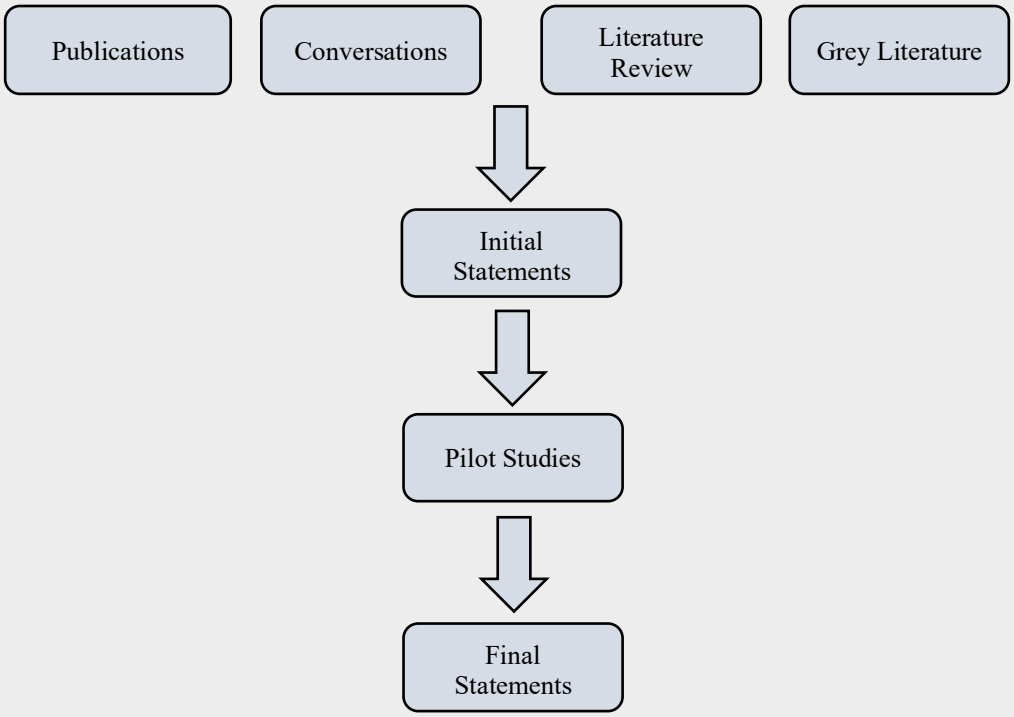
Q methodology involves a number of different stages which are formulating the research question, generating the Q set, selecting the participants, collecting the data, analysing the Q sort data, and interpreting the factors (Stenner, Watts, & Worrell, 2012). Stages 1- 4 are shown in Figure 4.

Figure 4: Q Methodology process

Stage 1: Formulating the Research Question

A subjective question or dimension of an issue that can have a range of perspectives (e.g. how can EPs best support schools to implement effective positive psychology being interventions?)

Stage 2: Generating the Statements (Q Set)



Stage 3: Selecting Participants

The aim is to gain access to a limited range of relevant viewpoints to analyse similarities, differences, and consensuses. Therefore a representative sample is selected from a specific population (e.g. educational psychologists).

Stage 4: Collecting Data

Participants rank-order the Q set into a quasi-normal distribution.

Most Disagree					**Most Agree**	
-3	**-2**	**-1**	**0**	**+1**	**+2**	**+3**

3.2.3 Generating the statements (Q Set)

A Q study must contain appropriate statements for participants to be able to 'tell a story' (Cross, 2005). Watts and Stenner (2012) state that an effective Q set should be both specific (i.e. related to the research question) and balanced (i.e. the statements should reflect a range of perspectives). All perspectives are presented with equal importance within the Q-set and each participant contributes their own subjectivity through the sorting process (Exel & Graaf, 2005). Whilst statement formation is susceptible to researcher bias, it is the process of sorting statements that is the area of interest within the investigation.

Initially, 41 statements were created (see Appendix D). 31 statements were obtained from the research literature related to the effective implementation of well-being interventions (e.g. Barry & Dowling, 2015; CASEL, 2019; Durlak et al., 2011; Dusenbury et al., 2005; Humphrey et al., 2013), 8 statements from the meta-analysis by Wright (2020a), and 2 statements from informal conversations with practicing EPs. As recommended by Watts and Stenner (2012), the 41 statements were then evaluated through two pilot studies to assess clarity, to identify duplicates, and to ensure that the statements provided a sufficiently broad coverage of the myriad ways in which EPs can best support schools to implement well-being interventions. The first pilot study was conducted with four participants (3 EPs and 1 Trainee EP) at an Educational Psychology Service in the South-West of England. The second pilot study was conducted with three participants (3 EPs) at an Educational Psychology Service in South Wales. Statements that were identified as duplicates were removed, statements that were identified as being poorly phrased were re-phrased, and participants in the pilot studies had the opportunity to provide additional statements to ensure a range of opinions and perspectives were being represented in the final Q set. This resulted in the final 40 statements, which may be seen in Table 11. A summary of the feedback from the pilot studies may be found in Appendix E.

Table 11. Q set statements

Statement Number	Statement (EPs can...)	Source(s)
S1	Deliver staff training about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL).	Meta-Analysis; Discussions with EPs; Durlak et al. (2011); Weare & Nind (2011)

S2	Deliver training to a school's senior leaders about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL).	Weare & Nind (2011); Discussions with EPs
S3	Provide training to all school staff regarding the theoretical basis of a well-being intervention (e.g. the PERMA model of positive psychology).	Meta-Analysis; Discussions with EPs; Durlak et al. (2011)
S4	Provide training to all school staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating).	Dusenbury et al. (2005); Barry & Dowling (2015); Humphrey et al. (2013); Weare & Nind (2011)
S5	Evaluate well-being interventions to ensure that recommendations provided to schools are evidence-based.	Meta-Analysis; Discussions with EPs; Pilot studies
S6	Deliver whole school well-being interventions (e.g. sessions through school assemblies / within lessons).	Meta-Analysis; Discussions with EPs
S7	Deliver group well-being interventions (e.g. a series of sessions with an identified group of students and/or school staff).	Meta-analysis; Discussions with EPs
S8	Deliver individual well-being interventions (e.g. sessions with a student/staff member).	Meta-analysis; Discussions with EPs
S9	Develop bespoke training for each school regarding well-being interventions.	Barry & Dowling (2015)
S10	Work collaboratively with a task group from the school to develop well-being approaches.	Pilot Studies; Discussions with EPs
S11	Work collaboratively with relevant individuals and teams within the Local Authority.	Pilot Studies; Discussions with EPs
S12	EP Services can have a designated well-being lead who oversees supporting all schools.	Discussions with EPs
S13	EP Services can ensure that all EPs are able to support schools with well-being.	Pilot Studies
S14	Support schools to monitor the implementation quality of a well-being intervention (e.g. intensity, consistency, programme adherence).	Durlak et al. (2011); Weare & Nind (2011)
S15	Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data).	Pilot Studies
S16	Support schools to ensure well-being interventions are implemented which include: (i) Sequenced activities (ii) Active forms of learning (iii) Focused on developing skills (iv) Explicit about targeting specific skills.	CASEL (2019); Durlak et al. (2011)
S17	Ensure school staff 'buy-in' to well-being interventions and programmes (e.g. by providing training about the links between well-being and academic performance).	Humphrey et al. (2013); Weare & Nind (2011)
S18	Ensure that families 'buy in' to well-being approaches (e.g. by providing training regarding the links between well-being and health outcomes).	Humphrey et al. (2013); Weare & Nind (2011)

S19	Support schools to involve families and communities within well-being approaches (e.g. by consulting with parents and carers).	Humphrey et al. (2013); Weare & Nind (2011); Discussions with EPs
S20	Ensure that schools are able to identify evidence-based well-being interventions (e.g. positive psychology, CBT).	Durlak et al. (2011)
S21	Support schools to plan the implementation of an intervention (e.g. integration, methods of delivery, program intensity).	Durlak et al. (2011)
S22	Ensure schools persist when implementing interventions (e.g. through regular update meetings).	Durlak et al. (2011)
S23	Disseminate information about well-being approaches (e.g. through consultation, websites, information leaflets, informal discussions).	Durlak et al. (2011)
S24	Support schools to evaluate well-being interventions (e.g. assessing progress towards specific outcomes).	Weare & Nind (2011)
S25	Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress).	Pilot Studies
S26	Ensure the adoption of well-being approaches that are sensitive to the local context.	Barry & Dowling (2015); Durlak et al. (2011)
S27	Support schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness).	Barry & Dowling (2015)
S28	Support schools to develop the role of 'well-being leads'	Mental Health and Well-being in Schools Survey (2019), Discussions with EPs
S29	Support schools to develop a well-being policy/action plan	Barry & Dowling (2015); Durlak et al. (2011)
S30	Support schools to integrate well-being approaches into the academic curriculum.	Barry & Dowling (2015); Weare & Nind (2011)
S31	Guide schools in adopting well informed whole school well-being approaches that function at both targeted and universal levels.	Weare & Nind (2011)
S32	Ensure the adoption of well-being approaches that schools are able to implement with fidelity and rigour (e.g. simple to implement).	Durlak et al. (2011); Weare & Nind, (2011)
S33	Directly support schools to implement well-being practices (e.g. supporting teachers in the classroom).	Weare & Nind (2011)
S34	Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH).	Weare & Nind (2011); Pilot studies
S35	Explore the strategic and conceptual understanding of well-being with senior leaders.	Pilot studies
S36	Explore the well-being needs of the local community.	Durlak et al. (2011); Pilot studies
S37	Identify the well-being needs of children and young people in schools.	Pilot studies

S38	Explore with school senior leaders existing practices that promote well-being.	Pilot studies
S39	Support schools to prioritise staff well-being (e.g. implementing staff well-being interventions).	Pilot studies
S40	Explore with senior leaders the willingness to adopt whole school change regarding well-being.	Pilot studies

3.2.4 Selecting Participants

Watts and Stenner (2012) recommend that participants should be sampled through purposive sampling and should be identified "because of their special relevance to the goals of the study" (McKeown & Thomas, 1988, p.31). In addition, participants should have a "defined viewpoint to express" and be those whose "viewpoints matter in relation to the subject at hand" (Watts & Stenner, 2012, p.70). Therefore, EPs were chosen as the most appropriate participants to include within this study. There is no strict guidance regarding an ideal sample size for Q methodology as discrete perspectives can manifest from data generated from a relatively small number of participants (Watts & Stenner, 2012). However Q methodology is most commonly used with sample sizes of between 12-40 participants and, most importantly, with fewer participants than Q statements (Webler, Danielson, & Tuler, 2009). This study ultimately involved 24 EP participants. EPs were recruited via EPNET, an online forum described as a "forum for the exchange of ideas and information among University research/teaching staff working in the field of Educational Psychology" (EPNET, 2019). Demographic information was collected regarding each participant's current role (e.g. trainee, main grade, senior, principal). All participants were trainee EPs or qualified EPs at the time of participation in the study. The final sample comprised seven trainee EPs, nine main grade EPs, four senior EPs, three principal EPs, and one 'other' EP.

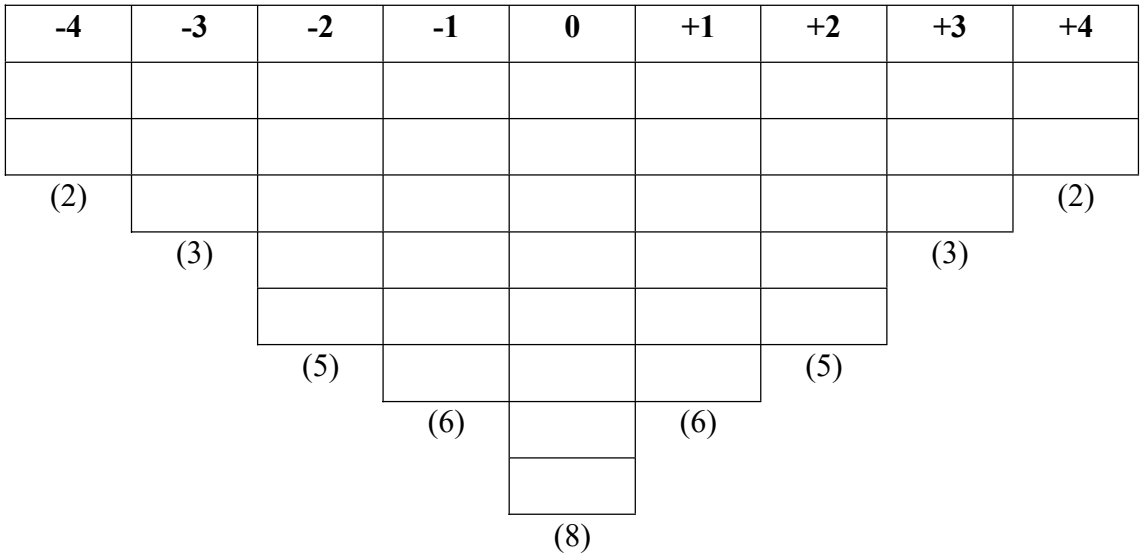
3.2.5 Collecting Data

All Q Sorts were conducted online using Q Sortware, a free online Q methodology software programme (available at www.qsortware.net). Participants were asked to evaluate statements regarding how EPs may best support schools to implement PPIs to promote the well-being of young people. Participants initially allocated each of the 40 statements into one of three boxes: *most practical and effective*, *neutral*, and *least practical and effective*. Participants then sorted the same 40 statements into a 9-point quasi-normal distribution from least practical and effective methods by which to support the well-being of young people in schools (-4), through neutral, to most practical and

effective methods (+4) (see Figure 5). Appendices F and G provide screenshots of the initial online Q sort and the final online Q sort.

Brown (1980) suggests a 9-point distribution (+4 to -4) for Q sets fewer than 40 and an 11-point distribution (+5 to -5) for Q sets between 40 and 60. A 9-point distribution was chosen as more appropriate for user-functionality given the online administration. In addition, a flattened quasi-normal distribution of statements was chosen as this "provides more opportunities for responses at the extremes of the distribution and reduces the number of those in the centre" (Brown, 1980, p.200).

Figure 5. Quasi-normal forced choice distribution



3.2.6 Analysing the Q Sort Data

A total of 24 Q sorts were analysed using the computer software programme PQMethod (Schmolck, 2018). The Q sorts were intercorrelated and analysed through principal components analysis to determine factors which "indicate clusters of persons who have ranked the statements in essentially the same fashion" (Brown, 1980, p.6). There are a number of methods that may be applied when determining an appropriate number of factors to be extracted (e.g. consideration of eigenvalues, significant loadings, scree plot, cumulative percentage variance explained) (Watts & Stenner, 2012). For the purposes of this study, a scree plot was chosen because other methods produced too many factors for useful retention (Streiner, 1998). PQMethod identifies Q sorts that share similar distribution patterns and provides an exemplar array for each extracted factor (see Appendix H).

3.2.7 Interpreting the Q Factors

Watts and Stenner (2012) recommend a three-stage process for interpreting each factor: direct comparison of factor arrays, examination of significant statements within each factor, and analysis of participant loadings onto each factor. A crib sheet was created for each factor (see Appendix I) that collated statements that were evaluated to be most practical and effective (+4, +3) and least practical and effective (-4, -3), as well as statements that were ranked higher or lower when compared to other factors. In addition, the data were examined for statistically significant statements on each factor and these were highlighted upon the crib sheets. Finally, demographic information was analysed for participants that loaded onto each factor.

3.2.8 Ethical Considerations

Participant's Rights and Informed Consent

Participants for the pilot studies and the online administration of the Q sort were provided with information as part of the recruitment process (see Appendices J and K) that fully informed them of the purpose and process of the study and clearly stated their rights (e.g. the right to withdrawal). Participants in the pilot studies signed a consent form that stated they understood their rights and agreed to participation (see Appendix L). Participants in the online Q study were required to confirm their consent through clicking a button within the Q Sortware software programme (see Appendix M). At the end of the studies, participants were provided with debrief information (see Appendices N and O).

Confidentiality and Anonymity

Demographic information was collected regarding each EP's current role (e.g. trainee, main grade, senior, principal, other) and an email address was recorded for each participant as part of the data collection process. All participant information was kept confidential and stored securely by the researcher. All data were fully anonymised during the thesis writing process.

Complaints Procedure

Full details of the complaints procedure were provided within the pilot study participant information sheet and also the online information. These were compliant with Cardiff University's ethical guidelines and procedures.

3.3 Q Methodology Results

The following section presents a summary of the results that emerged from analysis of the Q Sort data. Confirmatory factor analysis and varimax rotation of the data identified four main factors relevant to the research. Each of the factors that were identified are presented below.

3.3.1 Unrotated Factor Matrix

Table 12 presents the unrotated factor matrix with extracted factors, associated eigenvalues, and explained variance. The correlation matrix between sorts may be found in Appendix P.

Table 12. Unrotated factor matrix (displaying factors with eigenvalues > 1)

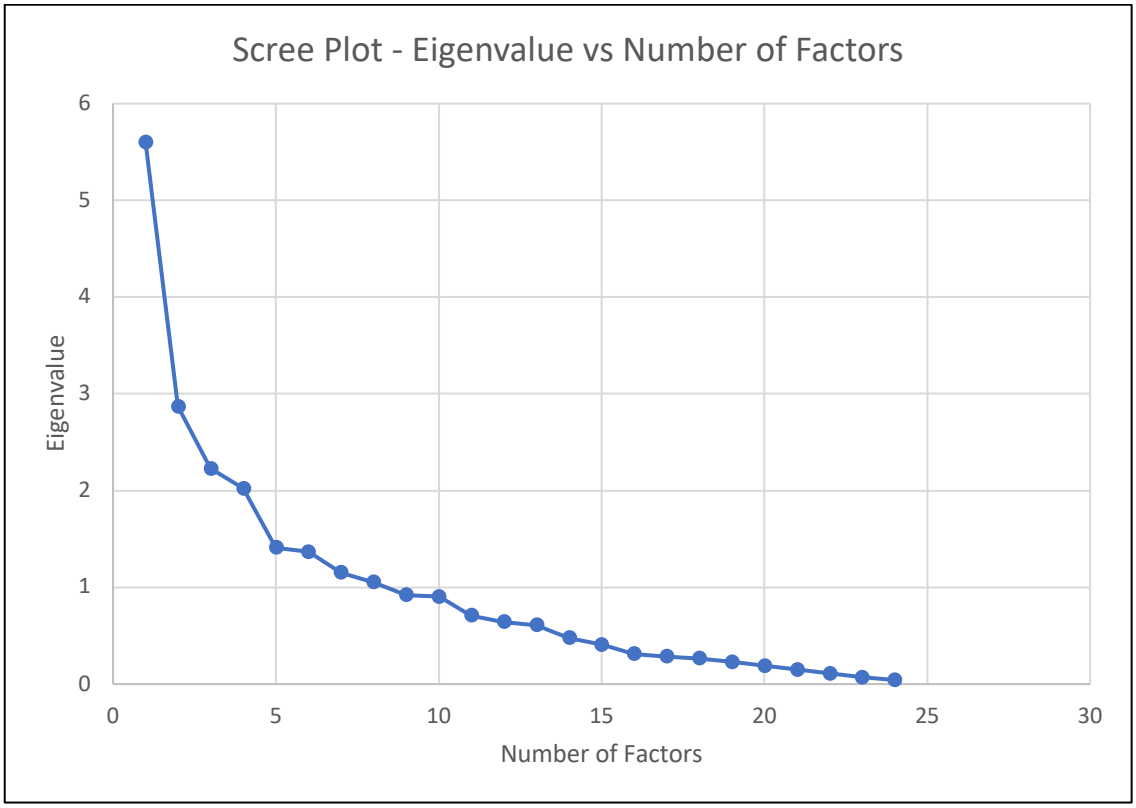
Participant Number	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
A1	0.171	-0.599	0.357	0.031	0.052	-0.222	0.2049	-0.021
B1	0.759	-0.301	-0.016	-0.038	-0.021	-0.157	-0.008	-0.017
C1	0.429	-0.047	-0.295	0.545	-0.036	-0.334	-0.206	-0.083
D1	0.286	0.083	0.130	0.559	0.197	0.531	-0.218	-0.256
E1	0.504	0.346	0.271	0.031	-0.389	-0.385	-0.290	0.065
F1	0.281	-0.180	0.402	-0.285	0.338	-0.253	0.321	-0.143
G1	0.656	0.203	-0.273	-0.003	-0.086	-0.257	-0.023	-0.053
H1	0.139	0.036	0.711	0.102	0.266	0.058	-0.256	0.300
I1	0.562	0.217	0.234	-0.008	-0.162	-0.020	-0.053	-0.482
J1	0.612	-0.288	0.035	0.097	-0.258	0.104	-0.450	0.118
K1	0.566	-0.207	-0.491	0.085	-0.192	-0.051	0.109	0.106
L1	0.405	0.692	-0.105	-0.291	0.008	0.124	-0.020	0.130
M1	0.394	0.680	-0.114	-0.243	0.129	0.246	0.137	0.092
N1	0.555	0.169	-0.292	-0.429	0.435	-0.143	-0.211	0.039
O1	0.478	-0.335	0.106	-0.165	-0.339	0.562	0.024	0.155
P1	0.609	-0.392	-0.142	-0.301	0.113	0.071	-0.011	0.042
Q1	0.334	0.243	0.073	0.245	-0.345	0.083	0.602	0.203
R1	0.612	-0.335	-0.095	-0.213	0.224	0.379	0.002	-0.123
S1	0.403	-0.257	0.599	-0.371	-0.205	-0.046	0.026	-0.033
T1	0.327	0.251	0.194	0.577	0.412	0.041	0.106	-0.142
U1	0.399	-0.061	0.206	0.258	0.321	-0.164	0.045	0.621
V1	0.638	0.073	0.088	0.406	-0.123	0.038	0.285	0.010
W1	0.600	0.327	-0.010	-0.135	0.152	-0.071	0.130	-0.190

X1	-0.129	0.623	0.522	-0.170	-0.195	0.005	-0.099	-0.090
Eigenvalues	5.59	2.87	2.23	2.02	1.41	1.37	1.15	1.05
Variance (%)	23	12	9	8	6	6	5	4

3.3.2 Scree Plot

Figure 6 shows a scree plot of unrotated factor eigenvalues versus the number of factors. Visual inspection of the scree plot indicates that the initial break in the curve occurs at the fifth factor, suggesting that it is appropriate to extract a four-factor solution (Streiner, 1998).

Figure 6: Scree plot



3.3.3 Rotated Factor Matrix

Table 13 shows the rotated factor matrix with an X indicating a defining sort (i.e. those participants who share a similar sorting distribution pattern). These defining sorts were combined to create an exemplar Q sort (called a factor array) for each factor (see Appendix H).

Table 13. Rotated factor matrix with an X indicating a defining sort

Participant Number	Factor 1	Factor 2	Factor 3	Factor 4
A1	0.339	-0.453 X	0.436 X	0.079
B1	0.726 X	0.133	0.221	0.273
C1	0.330	-0.010	-0.341	0.587 X
D1	0.002	-0.040	-0.016	0.645 X
E1	0.055	0.453 X	0.304	0.385
F1	0.216	0.043	0.550 X	-0.050
G1	0.443 X	0.504 X	-0.119	0.287
H1	-0.191	-0.050	0.633 X	0.311
I1	0.192	0.399	0.315	0.350
J1	0.571 X	0.015	0.184	0.329
K1	0.677 X	0.138	-0.307	0.198
L1	-0.023	0.858 X	0.000	0.050
M1	-0.023	0.826 X	-0.025	0.050
N1	0.479 X	0.599 X	-0.011	0.080
O1	0.528 X	0.009	0.312	-0.127
P1	0.767 X	0.114	0.174	0.054
Q1	0.023	0.238	0.027	-0.061
R1	0.702 X	0.119	0.179	0.422 X
S1	0.297	0.045	0.796 X	-0.034
T1	-0.092	0.094	0.021	0.723 X
U1	0.197	0.007	0.201	0.439 X
V1	0.302	0.181	0.083	0.674 X
W1	0.297	0.602 X	0.049	0.209
X1	-0.604 X	0.419 X	0.407 X	0.019
Explained Variance (%)	17	14	10	12

Table 14 shows the correlation between factor scores. The low correlation coefficients between factors suggest that there exist four distinct perspectives.

Table 14. Correlation between factor scores

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	1.000	0.174	0.263	0.306
Factor 2	0.174	1.000	0.073	0.223
Factor 3	0.263	0.073	1.000	0.111
Factor 4	0.306	0.223	0.111	1.000

3.3.4 Participant Demographics

Table 15 shows the participant demographic information.

Table 15. Participant demographics

Participant Number	Role
A1	Principal
B1	Senior
C1	Senior
D1	Main grade
E1	Principal
F1	Senior
G1	Principal
H1	Main grade
I1	Main grade
J1	Main grade
K1	Trainee
L1	Trainee
M1	Main grade
N1	Main grade
O1	Senior
P1	Main grade
Q1	Trainee
R1	Trainee
S1	Trainee
T1	Trainee
U1	Main grade
V1	Other
W1	Trainee
X1	Main grade

3.3.5 Factor Array Narratives

A factor array narrative provides an interpretation of each factor by describing key statements and their placement within the Q sort. The statement number (e.g. S2) and statement placement in the distribution (e.g. +4) are referenced in order to provide transparency regarding each narrative. The descriptions below provide an abridged

version of the factor array narratives. The full versions of each factor array narrative are presented within Appendix Q.

Factor 1: Working Strategically with Key Stakeholders

Factor 1 has an eigenvalue of 5.59 and explains 17% of the variance. Eight EPs loaded positively onto this factor. One EP (X1) loaded negatively onto this factor, indicating an opposing perspective. Two EPs (G1 and N1) expressed this perspective as well as Factor 2. One EP (R1) expressed this perspective along with Factor 4. One EP (X1) loaded onto this factor along with Factor 2 and Factor 3.

EPs who loaded onto this factor expressed the view that the most practical and effective approach for supporting schools to implement positive psychology well-being interventions was through working strategically with individuals and teams within schools (particularly senior management) and the local authority. For example, EPs can:

- (S2) Deliver training to a school's senior leaders about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). +3
- (S35) Explore the strategic and conceptual understanding of well-being with senior leaders. +1
- (S34) Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH). +4
- (S11) Work collaboratively with relevant individuals and teams within the Local Authority. +4
- (S10) Work collaboratively with a task group from the school to develop well-being approaches. +3

EPs who loaded onto this factor expressed the view that the least practical and effective approaches for supporting schools to implement positive psychology well-being interventions was through directly working in schools (e.g. delivering interventions and supporting the implementation of interventions in schools). For example, EPs may find it less practical and effective to:

- (S8) Deliver individual well-being interventions (e.g. sessions with a student/staff member). -3
- (S6) Deliver whole school well-being interventions (e.g. sessions through school assemblies/within lessons). -4
- (S33) Directly support schools to implement well-being practices (e.g. supporting teachers in the classroom). -4

Factor 2: Working Systemically with Key Stakeholders

Factor 2 has an eigenvalue of 2.87 and explains 14% of the variance. Seven EPs loaded positively onto this factor. One EP (A1) loaded negatively onto this factor, indicating an opposing perspective. Two EPs (G1 and N1) expressed this perspective as well as Factor 1. One EP (A1) expressed this perspective along with Factor 3. One EP (X1) loaded onto this factor along with Factor 1 and Factor 3.

EPs who loaded onto this factor expressed the view that the most practical and effective approach for supporting schools to implement positive psychology well-being interventions was through working systemically at multiple levels (e.g. working with children and young people, working with families, working with school staff). For example, EPs can:

- (S1) Deliver staff training about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). +4
- (S19) Support schools to involve families and communities within well-being approaches (e.g. by consulting with parents and carers). +4
- (S37) Identify the well-being needs of children and young people in schools. +3

In addition, EPs who loaded onto this factor expressed the opinion that it was important to ensure that everyone involved should 'buy in' to an approach. For example, EPs can:

- (S17) Ensure school staff 'buy-in' to well-being interventions and programmes (e.g. by providing training about the links between well-being and academic performance). +2
- (S18) Ensure that families 'buy in' to well-being approaches (e.g. by providing training regarding the links between well-being and health outcomes). +3

Furthermore, EPs who loaded onto this factor expressed the opinion that it was important to implement high quality interventions. For example, EPs can:

- (S16) Support schools to ensure well-being interventions are implemented which include: (i) Sequenced activities (ii) Active forms of learning (iii) Focused on developing skills (iv) Explicit about targeting specific skills. +1
- (S20) Ensure that schools are able to identify evidence-based well-being interventions (e.g. positive psychology, CBT). +1

EPs who loaded onto this factor expressed the view that the least practical and effective approach for supporting schools to implement positive psychology well-being

interventions was through a focus upon supporting implementation. For example, EPs may find it less effective to:

- (S4) Provide training to all school-staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). -4
- (S25) Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress). -4
- (S15) Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data). -3

Factor 3: Supporting a Whole School Approach

Factor 3 has an eigenvalue of 2.23 and explains 10% of the variance. Five EPs loaded positively onto this factor. One EP (A1) expressed this perspective as well as Factor 2. One EP (X1) loaded onto this factor along with Factor 1 and Factor 2.

EPs who loaded onto this factor expressed the view that the most practical and effective approach for supporting schools to implement positive psychology well-being interventions was through supporting an integrative whole school approach. For example, EPs can:

- (S27) Support schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness). +4
- (S31) Guide schools in adopting well informed whole school well-being approaches that function at both targeted and universal levels. +3
- (S34) Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH). +3
- (S40) Explore with senior leaders the willingness to adopt whole school change regarding well-being. +3
- (S30) Support schools to integrate well-being approaches into the academic curriculum. 0

In addition, EPs who loaded onto this factor expressed the view that it was important that they adapt practice to fit the local context. For example, EPs can:

- (S32) Ensure the adoption of well-being approaches that schools are able to implement with fidelity and rigour (e.g. simple to implement). +2
- (S36) Explore the well-being needs of the local community. +2

- (S26) Ensure the adoption of well-being approaches that are sensitive to the local context. -1

EPs who loaded onto this factor expressed the view that the least practical and effective approach for supporting schools to implement positive psychology well-being interventions was through a focus on an evidence-based approach and supporting implementation quality. For example, EPs may find it less useful to:

- (S15) Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data). -4
- (S20) Ensure that schools are able to identify evidence-based well-being interventions (e.g. positive psychology, CBT). -4
- (S4) Provide training to all school staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). -3
- (S25) Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress). -3
- (S5) Evaluate well-being interventions to ensure that recommendations provided to schools are evidence-based. -2
- (S21) Support schools to plan the implementation of an intervention (e.g. integration, methods of delivery, program intensity). -1
- (S24) Support schools to evaluate well-being interventions (e.g. assessing progress towards specific outcomes). -1

Factor 4: Providing Training and Supporting High-Quality Implementation

Factor 4 has an eigenvalue of 2.02 and explains 12% of the variance. Six EPs loaded positively onto this factor.

EPs who loaded onto this factor expressed the view that the most practical and effective approach for supporting schools to implement positive psychology well-being interventions was through providing training for school-staff. For example, EPs can:

- (S1) Deliver staff training about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). +4
- (S2) Deliver training to a school's senior leaders about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). +3

- (S9) Develop bespoke training for each school regarding well-being interventions. +3
- (S3) Provide training to all school staff regarding the theoretical basis of a well-being intervention (e.g. the PERMA model of positive psychology). +1
- (S4) Provide training to all school staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). 0

In addition, EPs who loaded onto this factor felt that it was important to consider how best to support high-quality implementation. For example, EPs can:

- (S21) Support schools to plan the implementation of an intervention (e.g. integration, methods of delivery, program intensity). +3
- (S14) Support schools to monitor the implementation quality of a well-being intervention (e.g. intensity, consistency, programme adherence). +1
- (S15) Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data). +1
- (S24) Support schools to evaluate well-being interventions (e.g. assessing progress towards specific outcomes). +2

EPs who loaded onto this factor expressed the view that the least practical and effective approach for supporting schools to implement positive psychology well-being interventions was through school and community engagement and through designation of 'expert' roles. For example, EPs may find it less useful to:

- (S12) EP Services can have a designated well-being lead who oversees supporting all schools. -4
- (S25) Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress). -4
- (S17) Ensure school staff 'buy-in' to well-being interventions and programmes (e.g. by providing training about the links between well-being and academic performance). -3
- (S18) Ensure that families 'buy in' to well-being approaches (e.g. by providing training regarding the links between well-being and health outcomes). -3
- (S36) Explore the well-being needs of the local community. -3
- (S13) EP Services can ensure that all EPs are able to support schools with well-being. -1

- (S22) Ensure schools persist when implementing interventions (e.g. through regular update meetings). -2
- (S28) Support schools to develop the role of 'well-being leads'. -1

Table 16 provides a summary of the key procedures for each factor derived from statements within each factor narrative array.

Table 16. Summary of findings

Factor Number and Title	Number of EPs Loaded on Factor	Key Procedures for Supporting Schools to Implement Effective Positive Psychology Well-being Interventions
1 – Working strategically	8 positive and 1 negative	Working with a school's senior leadership team (e.g. delivering training about implementing evidence-based well-being interventions, exploring the conceptual understanding of well-being, exploring existing practices that promote well-being, and supporting the development of whole school well-being approaches).
2 – Working systemically	7 positive and 1 negative	Working systemically at multiple levels (e.g. delivering staff training about implementing evidence-based well-being interventions, supporting schools to involve families and communities within well-being approaches, identifying the well-being needs of children and young people in schools).
3 – Whole School Approach	5 positive	Supporting an integrative whole school approach (e.g. supporting schools to integrate well-being into their core culture and ethos, guiding schools in adopting well informed whole school well-being approaches that function at both targeted and universal levels, supporting senior leadership teams in developing whole school well-being approaches, exploring with senior leaders the willingness to adopt whole school change regarding well-being, supporting schools to integrate well-being approaches into the academic curriculum).
4 – Training and Implementation	6 positive	Providing training and support for implementation (e.g. delivering staff training about implementing evidence-based well-being interventions, developing bespoke training for each school, providing training to all school-staff regarding implementation science, supporting schools to plan the implementation of an intervention, supporting schools to monitor the implementation quality of a well-being intervention, supporting schools to evaluate well-being interventions).

3.4 Discussion

The following section provides a discussion of the findings from the research. In addition, a commentary is provided on the extent to which the study has provided answers to the research question. The section concludes with a discussion regarding implications for the practice of EPs and also recommendations for future research regarding this area of enquiry.

3.4.1 Discussion

Research Question: How can EPs best support schools to implement effective positive psychology interventions?

A synthesis of the research evidence by Wright (2020a) demonstrated that multi-component PPIs may be marginally effective at improving the well-being of young people in schools. However, Wright (2020a) noted that a number of factors may moderate the effectiveness of PPIs. Similarly, systematic reviews and meta-analyses of the research evidence have highlighted a number of important factors that determine whether social and emotional interventions are effective at supporting the well-being of children and young people in schools (e.g. Durlak et al., 2011; Meyers, Durlak, & Wandersman, 2012; Oberle et al., 2016; Weare & Nind, 2011).

Q methodology was used to ascertain the perspectives of 24 EPs regarding how EPs can best support schools to implement practical and effective PPIs to promote the well-being of children and young people in schools. Four factors were extracted. Nine participants loaded onto *Factor 1- Working Strategically with Key Stakeholders*, eight participants loaded onto *Factor 2 - Working Systemically with Key Stakeholders*, five participants loaded onto *Factor 3 - Supporting a Whole School Approach*, and six participants loaded onto *Factor 4 - Providing Training and Supporting High-Quality Implementation*.

Factor 1: Working Strategically with Key Stakeholders

Eight participants shared the perspective that the most practical and effective procedures for supporting schools to implement well-being interventions is through working at a strategic level with school senior leaders and relevant individuals/teams within the local

authority. For example, EPs can deliver training to school senior leaders about implementing evidence-based well-being interventions. This perspective is in agreement with the research literature, which has emphasised the important role that school senior leaders have in supporting well-being and the value of working with numerous key stakeholders upon strategies to support implementation through cultural and organisational change (e.g. Durlak, 2016; Oberle et al., 2016; Weare & Nind, 2011). It should be noted however that one other participant loaded negatively onto this factor, indicating an opposing opinion (i.e. it may be more useful for EPs to work directly within schools with children and young people rather than working strategically) which is congruent with the findings of Wright (2020a) who found that PPIs may be more effective when delivered directly by psychologists.

Factor 2: Working Systemically with Key Stakeholders

Seven participants shared the perspective that the most practical and effective procedures for supporting schools are through working systemically at multiple levels. For example, ensuring that school staff, families, and communities 'buy in' to well-being approaches. These findings are consistent with the research literature, which suggests that school staff, family, and community engagement are important for supporting effective implementation of well-being interventions (e.g. CASEL, 2019; Durlak et al., 2011; Durlak, 2016; Oberle et al., 2016; Weare & Nind, 2011).

Factor 3: Supporting a Whole-School Approach

Five participants shared the perspective that the most practical and effective procedures for supporting schools are through working to develop a whole-school approach. For example, supporting schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness), guiding schools in adopting well informed whole school well-being approaches that function at both targeted and universal levels, and supporting senior leadership teams in developing whole school well-being approaches (e.g. through Strengths Weaknesses Opportunities and Threats [SWOT] analysis, appreciative inquiry, and Planning Alternative Tomorrows with Hope [PATH]). Research evidence suggests that an integrated whole school approach with a collective vision and purpose is important for the effective implementation of social and emotional well-being programmes (e.g. CASEL, 2019; Durlak, 2016; Oberle et al., 2016; Weare & Nind, 2011).

Factor 4: Providing Training and Supporting High-Quality Implementation

Six participants shared the perspective that the most practical and effective procedures for supporting schools are through providing training to school staff and supporting schools to ensure high quality implementation. For example, EPs can deliver staff training about implementing evidence-based well-being interventions (such as Acceptance and Commitment Therapy [ACT], positive psychology, and Social and Emotional Aspects of Learning [SEAL]). The importance of providing training to school staff has been highlighted as a key factor to facilitate the implementation of well-being intervention programmes (e.g. Durlak, 2016; Meyers et al., 2012; Oberle et al., 2016). Particularly since concerns have been raised that initial teacher training programmes do not currently provide school-staff with the requisite expertise to implement well-being interventions to a high standard (Askell-Williams & Cefai, 2014; Ransford et al., 2009). In addition, the research literature has extensively emphasised the need to support high quality implementation, such as the effective monitoring and evaluation of outcomes (Durlak et al., 2011; Humphrey et al., 2013; Oberle et al., 2016).

There appears to be a distinct contrast between the results of the meta-analysis by Wright (2020a) and the findings from the Q study. The majority of EPs have the view that the most practical and effective approaches for supporting well-being are through working at an organisational level within educational systems (e.g. working with senior leaders, supporting a whole school approach, delivering staff training) and the least practical and effective approaches are through working directly with children and young people. However, Wright (2020a) suggests that PPIs may be most effective when implemented directly by EPs. It may be the case that EPs have adopted their perspective because systemic practices (e.g. consultation) are generally viewed as being particularly effective and efficient models of practice within the field of educational psychology (see, for example, Gameson & Rhydderch, 2008; O'Farrell & Kinsella, 2018; Wagner, 2000), though this may not necessarily be true in the case of implementing well-being interventions. In addition, there is a distinction to be made between efficacy and practicality i.e. EPs may view supporting well-being at an organisational level to be the most practical but least effective approach and supporting well-being at an individual level to be the most effective but least practical approach. Unfortunately this study did not distinguish between these two elements, and no follow-up interviews were conducted, and therefore it is difficult to ascertain a deeper understanding of EP's

views. Furthermore, it is also important to note that not all EPs felt that supporting high-quality implementation was the most practical and effective means for supporting schools, yet this area has been repeatedly highlighted within the wider research literature as being absolutely crucial for the efficacy of well-being interventions and approaches.

3.4.2 Strengths and Limitations of the Research

The current study has several strengths (e.g. a unique area of research, providing evidence-informed practical strategies and procedures for EPs to utilise, exploring EP's dominant viewpoints and perspectives) as well as a number of limitations (e.g. biased statement formation, lack of follow-up interviews, limited demographic information). Strengths and limitations are discussed further within Part 3 of the thesis (the critical review).

3.4.3 Implications for Future Research

As discussed by Wright (2020a), it is important that future research regarding PPIs should involve the implementation and evaluation of high quality studies (such as randomised control trials) in schools, and in particular, moderating factors should be investigated. In addition, it is essential that methodological details are thoroughly reported within individual studies so that any future syntheses of research findings are able to explore contextual moderators and determine factors that influence intervention effectiveness. Furthermore, it would be highly beneficial to investigate the economic costs and resources required to implement PPIs effectively in order to ensure that these approaches are ultimately worthwhile. Another important action for future research is to compare multi-component PPIs with other evidence-based well-being interventions (e.g. SEAL). A comparison of relative effectiveness and cost-effectiveness would help to ensure that EPs are providing the best possible outcomes for children, families, and schools. Finally, it is essential that procedures to support implementation are fully explored as the findings from this study do not represent an exhaustive list of processes for EPs to follow, nor do they necessarily represent the most practical and effective procedures, and therefore further consideration and evaluation of EP practices within this area of interest should be conducted.

3.4.4 Implications for Educational Psychologists' Practice

Analysis by Wright (2020a) suggests that multi-component PPIs can be utilised in schools as an evidence-based approach to support the well-being of children and young people. However, school staff have reported a lack of confidence, skills and experience when implementing well-being interventions (Buchanan, Gueldner, Tran, & Merrell, 2009; Graham, Phelps, Maddison, & Fitzgerald, 2011) and therefore it is critical that EPs consider how best to support schools to implement these interventions effectively. The findings from the Q study appear to be congruent with recommendations from the research literature regarding effective implementation of well-being intervention programmes (e.g. CASEL, 2019; Durlak, 2016; Durlak et al., 2011; Meyers et al., 2012; Humphrey et al., 2013; Weare & Nind, 2011), suggesting that the conclusions from this study can provide practical, pragmatic, and evidence-informed recommendations for EPs. However, there is some contrast between EP views regarding effective implementation, the findings of Wright (2020a), and the wider findings in the field regarding the importance of high quality implementation. Therefore, EPs may wish either to make a clear distinction between most effective and most practical approaches to professional practice when supporting well-being, or, most likely, consider the combined relative importance of these two components when assisting children, families, and schools. In addition, as noted by Wright (2020a), it is also important that EPs also consider the cost-effectiveness of interventions and approaches. The results from the meta-analysis by Wright (2020a) have provided an evidence-based approach to supporting well-being in schools and the findings from the Q study have provided a number of methods by which EPs believe they can best support schools to implement well-being interventions. However, it is important to recognise that these conclusions do not represent the entirety of approaches and perspectives, but instead provide some practical and pragmatic suggestions by which EPs may wish to support well-being in schools. As such, EPs should explore alternative evidence-based approaches to supporting well-being within schools (e.g. SEAL) and additional methods to support the implementation of social and emotional well-being interventions (see, for example, Chatwin, 2018) to ensure the very best possible outcomes for their service users.

3.4.5 Conclusion

The current thesis sought to ascertain whether multi-component PPIs are effective at supporting the psychological well-being of children and young people within schools and to explore the means by which EPs might best support schools to implement these

interventions both practically and effectively. The thesis utilised a meta-analysis of the research evidence to estimate intervention efficacy (see Wright, 2020a) and made use of Q methodology in order to explore EPs views regarding effective implementation procedures. The findings from Wright (2020a) suggest that multi-component PPIs are somewhat effective for improving the well-being of children and young people in schools. In addition, a number of strategies were identified and evaluated for EPs to use when supporting the effective implementation of PPIs. The conclusions from this study are congruent with the wider findings in the field but also highlight some possible discrepancies between EPs' views and the research evidence regarding effective implementation.

The conclusions of this thesis should also be considered in terms of EPs' professional and ethical responsibilities to their service users (British Psychological Society, 2018). EPs have an imperative responsibility to support the social and emotional well-being development of children and young people in schools and communities. EPs have the psychological knowledge, skills and experiences necessary to provide a significant contribution to this important area of personal development and opportunities for support and collaboration should be encouraged to maximise the social and emotional well-being of all people.

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Implementing Effective Positive Psychology Interventions to Support the Well-Being of Young People in Schools: A Meta-Analysis of Randomised and Non-Randomised Interventions and a Q Study of Educational Psychologists' Perceptions Regarding Effective Implementation

Critical Review

By David Wright

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4.1 Introduction

This research project broadly aimed to answer the following question:

- How can educational psychologists best promote the well-being of children and young people in schools?

This was conceptualised as a pragmatic research project in which the research evidence was interrogated in order to ensure that educational psychologists (EPs) are able to adopt an evidence-based approach to practice but also provided EPs with useful and effective procedures with which to support well-being in schools. This critical appraisal provides a reflective and reflexive commentary on the research process and the role of the researcher. *Section 4.2* outlines the unique contribution that this research project has made to knowledge by providing a theoretical and professional context for the study, discussing the strengths and limitations of the research project, as well as outlining relevance of the findings for service users. *Section 4.3* provides a critical account of the research practitioner and includes a commentary on the research paradigm, key methodological and analytical decisions, ethical considerations, potential dissemination approaches, before concluding with a personal reflection on the research process.

4.2 Unique Contribution to Knowledge

4.2.1 Origins of the Research Project: Professional and Theoretical Context

An initial review of the literature indicated that there is widespread recognition regarding the importance of supporting the psychological well-being of young people in the UK and EPs are considered well-placed to support schools with well-being (e.g. Liddle & Carter, 2015; Stanbridge & Campbell, 2016). However, despite this recognition and need for explicit practices, there are no published studies which have explored specifically how EPs may best support schools to implement well-being interventions and approaches (Chatwin, 2018).

It was felt important to have an explicit psychological approach with which to frame this study in order to ensure that the thesis was grounded in psychology. A review of the research evidence suggests that it is more beneficial to focus upon fostering positive social and emotional competencies within young people, as this can have a more significant impact in the long term than do interventions and approaches that aim solely

to decrease negative outcomes (Barry & Dowling, 2015; Barry & Jenkins, 2007; Catalano et al., 2004; Durlak et al., 2011; O'Connell, Boat, & Warner, 2009; Weare & Nind, 2011). Positive psychology is a psychological approach that focuses upon fostering positive social and emotional competencies and therefore appeared to be a suitable theoretical and practical framework for this study.

There have been a number of criticisms of positive psychology. For example, Lundqvist and Kenttä (2010) argue that positive psychology has placed too much of an emphasis upon personal happiness, which is a dynamic and transient emotion i.e. it is not possible or maybe even necessary/desirable to be happy always. In addition, Becker and Marecek (2008) have criticised positive psychology for promoting the idea that individual choice and effort have a significant bearing upon flourishing and well-being, and therefore failing to give sufficient attention to the significant influence of social and environmental factors (see also Lomas, 2016). However, advocates of positive psychology have suggested that the discipline should be understood as a term which encompasses theories and research which share common goals such as fostering an optimal level of individual and collective wellbeing, equipping individuals with the strengths and skills needed to face the challenges of everyday life, and mitigating issues through a preventative model (Vella-Brodrick, 2011).

4.2.2 Strengths of the Research

4.2.2.1 Contribution to Knowledge: Research Question 1

It is essential that interventions and approaches are evaluated rigorously to ensure that EPs, among others, are engaging in evidence-based practice and, ultimately, to ensure that the best possible outcomes are provided for children, young people, families, and schools. Systematic reviews and meta-analyses are high quality methods for evaluating the research evidence regarding intervention efficacy. Prior to the current research, there have been a small number of systematic reviews and meta-analyses that have explored the use of positive psychology interventions (PPIs) to increase well-being and alleviate negative outcomes (e.g. Bolier et al., 2013; Renshaw & Olinger-Steeves, 2016; Sin & Lyubomirsky, 2009), however there has not been a synthesis of the research evidence regarding the effectiveness of multi-component PPIs in schools. In addition, an initial review of the research literature regarding multi-component PPIs within school settings revealed a number of primary studies with a range of outcomes, thereby indicating an

even greater need for a detailed investigation of the research evidence to be conducted. Therefore, this thesis has provided a unique contribution to knowledge by synthesising the research evidence and conducting a rigorous evaluation regarding the efficacy of PPIs in schools, to ensure that EPs, among others, can engage in the best possible practices when working with children, families, and schools.

4.2.2.2 Contribution to Knowledge: Research Question 2

Previous systematic reviews of the research literature have highlighted the important factors that appear to moderate the effectiveness of psychological well-being interventions (e.g. CASEL, 2019; Durlak et al., 2011; Weare & Nind, 2011). However, Wanless and Dmitrovich (2015) argue that schools and educational institutions are not currently giving due consideration to the various facilitators and barriers to successful implementation of well-being interventions. This has resulted in a number of authors raising concerns regarding the inconsistent implementation quality of school-based well-being interventions, which can lead to a reduction in positive outcomes (see for example Durlak et al., 2011; Greenberg, 2010). Despite these concerns, there is a paucity of published studies which have explicitly explored the ways in which EPs may best support schools to implement effective well-being interventions (Chatwin, 2018). Therefore, this thesis has provided a unique contribution to knowledge by collating a number of evidence-informed strategies and procedures for how EPs can best support schools with the effective implementation of well-being interventions and has also provided an indication of EP's dominant viewpoints and perspectives regarding this topic of interest. This has ensured that EPs are not only able to adopt an evidence-informed approach but also have access to pragmatic and practical guidance regarding supporting well-being in schools.

4.2.2.3 Relevance of the Research Findings to Service Users

This study has also provided important research findings for educational psychology service users. There is significant interest regarding supporting social and emotional well-being development in schools (Banerjee, Weare, & Farr, 2014; Office for National Statistics, 2018; Department for Education [DfE], 2018; Greig, MacKay, Roffey, & Williams, 2016; National Institute for Clinical Excellence [NICE], 2008; Wolpert, Humphrey, Belsky, & Deighton, 2013) and demands are being placed upon UK schools to foster the psychological well-being of young people (DfE, 2015; Graham, Phelps, Maddison, & Fitzgerald, 2011; Vostanis, Humphrey, Fitzgerald, Deighton, & Wolpert,

2013). As a result, school practitioners often feel unsupported and untrained when providing for young people's mental health and well-being needs (Hanley, Winter, & Burrell, 2017), and school staff have reported a lack of confidence, skills and experience when implementing well-being interventions (Buchanan, Gueldner, Tran, & Merrell, 2009; Graham et al., 2011). This research has evaluated an evidence-based approach for schools to utilise when supporting their students and therefore service users can feel better supported and more confident that they are choosing and adopting an appropriate approach to practice. In addition, this research has provided practical advice and guidance for EPs regarding effective implementation, much of which will be directly applicable for schools to utilise (e.g. the importance of monitoring and evaluating outcomes). Most importantly, this research has been guided by pragmatism with the ultimate aim of providing the best possible outcomes for children, young people, and schools through evidence-based and evidence-informed conclusions and guidance.

4.2.3 Limitations of the Research

4.2.3.1 Limitations of the Systematic Review and Meta-Analysis

Clinical and Methodological Differences Between Studies: The systematic review and meta-analysis by Wright (2020a) included participant populations, intervention programmes, and measured outcomes that were not identical across the studies. It is worth noting, though, that previous positive psychology meta-analyses have synthesised a range of outcome measures correlated with well-being, such as happiness, life satisfaction, and positive affect (e.g. Bolier et al., 2013; Hendriks et al., 2019). As a result of these clinical and methodological differences between studies, the analyses by Wright (2020a) demonstrate significant heterogeneity and therefore the calculated combined effect size may not be ecologically valid within all educational contexts as intervention effectiveness is likely to be moderated by a number of unknown variables.

Reviewing Studies: The review of the primary studies consistently raised issues regarding the varied reporting of methodological designs and study results. For example, none of the studies with pre-post designs reported pre-post correlations, which are required when calculating precise individual study effect sizes and sampling variances (Morris & DeShon, 2002). As a result the pre-post correlation coefficients had to be estimated using appropriate mathematical formulae recommended by Borenstein

et al. (2011) and Pustejovsky (2014). This will have influenced the pooled analysis (e.g. the calculation of the combined effect size) however only by a relatively negligible amount.

Inclusion Criteria: The quality of the included studies varied. For example, only ten randomised control trials were included within the analysis. Randomisation was adequate in four studies; however, six of the studies did not provide sufficient detail of randomisation procedures, which could lead to over-estimation of treatment effects. However, further analyses did not identify an association between study quality and intervention effectiveness, and the effect size in favour of PPIs remained robust when excluding studies that were evaluated to be less than high quality.

Moderator Analysis: It was not possible to conduct multivariate meta-regression and explore interaction effects. For example, the effectiveness of positive psychology interventions within specific settings (primary schools vs. secondary schools) may be moderated by intervention administrator (teacher vs. researcher vs. online) and intervention duration. Further exploration of moderators would provide important information regarding how best to implement effective interventions.

4.2.3.2 Limitations of the Q Study

Sample Size: A larger sample size could have revealed additional perspectives than those found within the current study. However, Watts and Stenner (2012) state that the existence of a distinct perspective can emerge from a small number of participants. Furthermore, the aim of Q methodology is to encourage participants to express an opinion, rather than to extrapolate findings to a wider population, and therefore a large sample size is not necessary to satisfy issues with generalisability (Brown, 1980).

Statement Formation: It is highly likely that researcher bias influenced the choice and wording of statements within the Q sort, thereby influencing perspectives available to the participants. However, as recommended by Watts and Stenner (2012), considerable effort was given to the statement formation and two pilot studies were used to evaluate the initial statements, assess the procedure, and to check the depth and breadth of content of the included statements, thereby reducing researcher bias.

Follow-Up Interviews: Interpretation of the data provided a simple understanding of perspectives, which was acceptable given the practical and pragmatic purposes of this research. However, additional insight may have been gleaned by conducting post-sort interviews with participants in order to understand their chosen distribution of statements, particularly at the extremities (i.e. -4,-3 and +3,+4). This may have aided factor interpretation and would have provided a deeper understanding of why participants held certain perspectives, particularly regarding any distinctions EPs may have discerned between most practical approaches and most effective approaches as noted by Wright (2020b).

4.3 Critical Account of the Research Practitioner

4.3.1 Origin of the Research Project: A Personal Perspective

It is important that the researcher considers his or her personal reasons for conducting research to provide "a sense of the context in which the research is conducted" (Barker, Pistrang, & Elliot, 2003, p.6). There were a number of reasons for choosing this topic to study, for example:

- Throughout the researcher's previous career as a secondary school science teacher he was constantly made aware of the huge importance of well-being and the impact that this had upon the lives of himself, his colleagues, and his students. Supporting well-being appeared in many guises; whether this was attempting to engage and motivate students who were feeling concerned and disheartened about examinations, supporting students who were having relationship difficulties, being mindful of colleagues who were experiencing mental health difficulties, or personally experiencing the numerous stresses of teaching.
- The researcher has a strong professional interest in positive psychology, as he feels that it is an approach that is congruent with his desire to support and help other people to flourish.
- The researcher had a keen desire to explore a topic of his own interest (e.g. well-being), that might directly impact upon his professional practice (i.e. conducting research that might generate evidence-based practical advice and guidance).

- The researcher wanted to conduct a statistical-based research project, as this is an area of academic interest and he wanted to strengthen and broaden his research skills and knowledge.
- The researcher had a strong desire to contribute towards evidence-based practice (EBP) for EPs. EBP involves the appraisal of the highest quality and best available evidence and can help to inform the decision to apply a particular approach or framework (Sackett, 2000; Rousseau & Gunia, 2016).

4.3.2 Research Paradigm: Pragmatism

This study adopted a pragmatic approach to conducting research as this represents the personal philosophical stance of the researcher. Robson (2011) states that philosophical pragmatism involves using "whatever philosophical or methodological approach works best for the particular research problem" (Robson, 2011, p.28) and may be characterised as an approach which emphasises utility within a context rather than a particular representation of said context (Landesman, 1997). This philosophical perspective accepts that the researcher may possess certain axiological, epistemological, and ontological beliefs but that these beliefs are not rigidly adhered to and that the researcher is primarily concerned with finding a pragmatic solution to the research problem/s. Within pragmatism, it is considered better to adopt a much more flexible theoretical position, in which deference to certain ontological and epistemological positions is secondary to facilitating solutions to change issues (Burnham, 2013). This can involve the interweaving of theoretical perspectives and methodological approaches with the aim of generating practical and pragmatic knowledge that is relevant to and for the service user. Therefore, two separate theoretical and methodological approaches were chosen to address the research questions: a meta-analysis to evaluate efficacy of interventions (Wright, 2020a), and Q methodology to explore EP's perceptions regarding effective implementation (Wright, 2020b). In order to highlight the possible influences of researcher bias, the research was conducted and reported on in such a way as to maintain transparency and establish trustworthiness (Lincoln & Guba, 1985). The researcher attempted to describe exactly what he did and make clear his own ideas and values which may have influenced the analysis of the data. It is then for the reader to decide whether the conclusions are credible.

A positivist paradigm was used to address research question 1 (meta-analysis) and a social-constructionist paradigm was taken to address research question 2 (Q

methodology). However, alternative ontological and epistemological research approaches could have been adopted. For example, research question 1 could have been addressed using a social-constructionist paradigm (e.g. collecting interview or focus group data from EPs regarding the effectiveness of well-being interventions). However, arguably social-constructionist paradigms are less appropriate for addressing questions regarding efficacy and effectiveness, as these approaches focus upon individual and collective subjective experiences. A positivist paradigm could also have been used to address research question 2 (e.g. collecting survey data from EPs to 'measure' the best methods to implement well-being interventions). However, this would not have overtly acknowledged the fact that the data would have reflected EPs' subjective experiences.

4.3.3 Development of the Research Questions

It was felt important that the research questions were underpinned by a pragmatic approach i.e. What works? What is going to be useful? What is going to be effective? Therefore, the initial research question involved determining whether positive psychology interventions were effective and could therefore be considered an evidence-based approach to professional practice. However, questions regarding utility, practicality, and logistics remained i.e. 'these interventions may be effective but how can they best be implemented?' Therefore, the subsequent research question involved exploring how EPs might best support schools to implement well-being interventions. It was hoped that by conducting a two-staged approach to this research that evidence-based and practical conclusions would be produced.

Additional research questions could have been generated regarding exploring EPs' perspectives (e.g. why do EPs hold particular viewpoints regarding the effective implementation of interventions?) However, it was felt that this would have only been able to be explored at a surface-level, given the resources necessary to address the other research questions. Furthermore, understanding meaning was not necessary given the pragmatic and practical paradigm of this study.

4.3.4 Systematic Literature Review and Meta-Analysis

4.3.4.1 Research Design: Systematic Literature Review and Meta-Analysis

An initial review of the research literature regarding multi-component PPIs within school settings revealed a number of primary studies with a range of outcomes.

Therefore, it was deemed highly important to synthesise the research evidence in order to evaluate rigorously the effectiveness of PPIs, to ensure that EPs, among others, can engage in evidence-based practice. There are a number of alternative methods of conducting a literature review, such as a scoping review, rapid evidence assessment, and a narrative review (Noble & Smith, 2018). However, systematic reviews and meta-analyses are considered the 'gold standard' of reviews and are most appropriate when addressing a highly focused research question regarding effectiveness (Cooke, Smith, & Booth, 2012; Noble & Smith, 2018; Methley, Campbell, Chew-Graham, McNally, & Cheraghi-Sohi, 2014).

It was important to ensure that there was a robust method for conducting the systematic literature review. The most contemporary method developed is PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) (Liberati et al., 2009). PRISMA provides a structured approach to ensure that authors can present a transparent and complete reporting of systematic reviews and meta-analyses and therefore allows the reader to appraise critically the research.

4.3.4.2 Methodology: Literature Search Strategy

The PICOS search tool was chosen as an appropriate instrument for the literature search strategy as this would identify both quantitative studies and mixed-methods studies and also enable an efficient search strategy (Methley et al., 2014). The PICOS tool has a relatively low sensitivity and so systematic reviews and meta-analyses relevant to this study were checked for comparison (e.g. Brownlee et al., 2013; Shankland & Rosset, 2017), and any previously unidentified relevant studies were included. Alternative frameworks could have been adopted. For example, the PICO tool may have identified a larger number of publications, however this would not have not been an efficient use of researcher time. The SPIDER tool is more appropriate for qualitative research syntheses and therefore was deemed to be unsuitable for this research project.

In order to ensure that the PICOS framework contained appropriate search terms, key target papers were identified prior to the database searches (Shoshani, Steinmetz, & Kanat-Maymon, 2016; Suldo et al., 2015), and these were looked for within the database searches.

4.3.4.3 Methodology: Eligibility Criteria

Inclusion and exclusion criteria were developed for the literature review. The rationale for each criterion has been detailed within empirical paper 1 of the thesis (Wright, 2020a). However, it was felt important to elaborate further on only including multi-component PPIs conducted in schools or educational settings and also limiting the search to studies that included benefits to well-being rather than including those which solely considered the reduction of psychopathological issues (e.g. depression, anxiety). If all well-being interventions had been included (e.g. Cognitive Behavioural Therapy [CBT], Acceptance and Commitment Therapy [ACT], Social Emotional Aspects of Learning [SEAL]) then the systematic review would have become unfeasibly large and unfocused. In addition, it was decided not to include some of these approaches because large scale analyses of their effectiveness have already been conducted. Furthermore, only benefits to well-being were considered in order to be congruent with the research literature and advice which suggests that whole-school approaches which focus upon fostering positive competencies are the most beneficial.

4.3.4.4 Methodology: Quality Assessment

Risk of bias was evaluated to ascertain validity of eligibility within the systematic review and meta-analysis. Internal and external validity was assessed using three frameworks for randomised control trials (RCTs). These were EMMIE (Johnson, Tilley & Bowers, 2015), the Weight of Evidence framework (Gough, 2007), the Cochrane Risk of Bias Tool (Higgins et al., 2011). Two frameworks were used for non-RCTs and repeated measures design studies (EMMIE and Weight of Evidence framework). Multiple frameworks were combined as it was considered that no single framework was appropriate for all types of studies (e.g. the Cochrane Risk of Bias Tool is unsuitable for repeated measure design studies and the Weight of Evidence framework requires an additional method or framework for assessing internal validity).

4.3.4.5 Methodology: Statistical Models

The standardised difference in means is the most appropriate summary measure to compare results when studies do not yield directly comparable data (i.e. when outcome measurements are not on the same scale) (Liberati et al., 2009). Well-being is not a uni-dimensional construct (Dodge, Daly, Huyton, & Sanders, 2012) and is often measured using a number of correlate outcomes and measurement instruments (see, for example, Bolier et al., 2013; Hendriks et al., 2019) and therefore standardised effect size was

chosen as the most appropriate summary measure. In addition, it was decided not to report Hedge's *g* to correct for upward bias in the calculations for effect size, as this is only necessary in very small sample sizes (Durlak, 2009).

4.3.4.6 Methodology: Data Extraction, Effect Size Calculations, and Pooled Analysis

The review of the primary studies consistently raised issues regarding the varied reporting of study results. As previously discussed, none of the studies with pre-post designs reported pre-post correlations that are required when calculating individual study effect sizes and sampling variances (Morris & DeShon, 2002). It is worth noting that these findings highlight the importance of researchers providing comprehensive statistical information within publications in order to maintain transparency and to allow for future systematic reviews and meta-analyses. There are guidelines available for researchers to follow when reporting the results of studies (e.g. Cooper, 2011) however, it appears that these are not currently being adhered to within the field of positive psychology interventions.

It is advised that outliers (i.e. studies outside the confidence interval of the pooled effect size) should be removed from the meta-analysis when a common effect size is assumed (Bolier et al., 2013). However, significant heterogeneity was expected and a common effect size could not be assumed and therefore all studies were included within the meta-analysis. In addition, sensitivity analysis was conducted to explore whether including or removing these types of studies had a significant effect upon the overall results and subsequent interpretations, however the impact appeared to be marginal.

4.3.4.7 Data Analysis: Interpretation of Findings

There was significant heterogeneity between the studies and the primary studies did not report sufficient information to allow for thorough moderator analyses and therefore interpretations of the findings are tentative at best. For example, it is clear from the interventions implemented within the primary studies, as well as the diverse inclusion criteria in previous meta-analyses, that there is no clear consensus regarding the exact structure and components of multi-component PPIs. For example, Bolier et al. (2013) conducted a meta-analysis and made the decision to exclude interventions that have been considered PPIs in other studies (e.g. mindfulness and meditation). This research only included studies that referenced 'positive psychology', however it could be argued

that doing so may not identify 'positive intervention' studies. Furthermore, there appears to be discrepancies regarding the selection of appropriate outcome measures. All of the included studies within this research used outcomes measures that directly measured well-being or that measured correlates of well-being such as life satisfaction and positive affect. Other meta-analyses and studies have included measures of psychopathological issues, such depression and anxiety. This highlights current difficulties regarding the conceptualisation of well-being. For example, some authors would argue that well-being and mental-health difficulties are at opposite ends of a single continuum (e.g. Davis et al., 2016), however others would argue that well-being and mental-health are weakly related orthogonal constructs (Keyes, 2005).

4.3.5 Q Methodology

4.3.5.1 Research Design: Q Methodology

A scoping review of the research literature on EP practices and perspectives identified the use of various research methods to gather and interpret viewpoints such as semi-structured interviews (Callicott & Leadbetter, 2013), questionnaires (Woods & Farrell, 2006), and focus groups (Jindal-Snape, Hannah, Smith, Barrow, & Kerr, 2009). During discussions with his research supervisor, Q methodology was brought to the researcher's attention as a rigorous and systematic approach to gathering and interpreting data related to perspectives and viewpoints (Barker, 2008). In Q methodology, participants are able to tell 'their own story' (Watts & Stenner, 2012, p.177) in order to 'reveal the dominant viewpoints' (Watts & Stenner, 2012, p.44). This was the intended purpose of the second research question within the study i.e. what are the dominant viewpoints regarding practical and effective procedures for EPs to support schools best to implement PPIs? Therefore, Q methodology was chosen as a suitable approach to encourage EPs to express their views. In addition, the process of conducting Q methodology would allow for the generation and evaluation of a number of procedures regarding EPs practice.

Critics of Q methodology have argued that structured sorting (i.e. the forced distribution of statements) does not allow participants to communicate fully the content and strength of their views (see Kampen & Tamás 2014 for further criticisms of Q methodology). However, Watts and Stenner (2012) assert that encouraging respondents to evaluate statements in such a manner helps to reveal key perspectives regarding the topic of

interest by encouraging participants to reflect more carefully upon their point of view. In addition, it has been argued that the process of factor analysis and interpretation can ascribe meaning to the statements that may have been differentially understood and interpreted by each participant (McKeown & Thomas, 2013). Attribution of meaning can be explored during and after the sorting process. Furthermore, it is important to note that Q methodology is not intended to extrapolate findings to a general population (Brown, 1980). Instead, Q methodology uses a systematic and analytical approach to reveal and understand perspectives.

Alternative methods to collect data regarding EPs' perspectives were considered and ultimately dismissed. For example, questionnaires were initially considered because they are cost and time efficient, however it could be argued that questionnaires lack the ability to provide sufficient detail (Barker, Pistrang, & Elliott, 2015). Alternatively, a focus group could have been conducted as a method of data collection. Finch and Lewis (2003) comment that focus groups are able to include some of the depth that comes with individual interviews and provide a 'richness' that comes with group interactions. The authors also note that focus group conversations allow ideas to emerge in a more natural setting than individual interviews and may reflect the way in which people perceive and experience the world around them (Bloor, 2001). However, after considering the logistical difficulties of organising a number of focus groups for EPs (e.g. suitable times/dates/locations for all participants) it was decided that a focus group would not have been suitable. In addition, there are potential sources of biases within focus groups (e.g. discussions can be dominated by one or more participants) (Smithson, 2000) and the researcher can differentially reinforce various themes through verbal and non-verbal communication (Cooper, Heron, & Heward, 2007). Therefore, it was felt that Q methodology would provide a more robust approach. Furthermore, it was hoped that the Q sort pilot studies would act as quasi-focus groups and would provide similar benefits with the addition of the structured sorting process to aide conversations.

4.3.5.2 Methodology: Formation of the Statements (Q Set)

Watts and Stenner (2012) recommend that considerable effort should be given to the statement formation. The statements were initially developed through a scoping review of the literature regarding the effective implementation of social and emotional interventions (e.g. Chatwin, 2018; Durlak et al., 2011), the process and results of the meta-analysis, and a focused discussion with an EP. Although the scoping review

occurred prior to collecting data, further relevant literature was identified post analysis. As a result, a number of additional ideas were detailed in the literature that could have been included within the statements, such as the importance of funding and allocation of resources (Oberle et al., 2016), and the necessity for effective teamwork, communication and strong relationships (Durlak, 2016; Oberle et al., 2016; Weare, 2010). On reflection it would have been more rigorous to have conducted a systematic review of the literature in order to have identified a comprehensive range of statements, however this would not have been realistically possible given that a systematic review and meta-analysis was already being conducted to address the first research question. In addition, feedback from the pilot Q studies indicated that it was difficult to manage a large number of statements within the Q sort and therefore including additional statements may not have been pragmatic.

Two pilot studies were used to evaluate the initial statements, assess the procedure, and to check the depth and breadth of content of the included statements (see Appendix D for the initial statements). This process was exceedingly helpful. For example, during the pilot studies it was clear that most of the statements contained too many words and that, as a result, participants had difficulty understanding and differentiating between statements. The statements were refined once by the researcher and then a second time under the guidance of his research supervisor. In addition, the process of conducting the pilot studies created rich discussions which were used as a source of additional statements to ensure that as many potential viewpoints and perspectives were available to the final participants. A summary of the feedback from the pilot studies may be found in Appendix E.

4.3.5.3 Methodology: Online Administration

All Q sorts were conducted online using Q Sortware, a free online Q methodology software programme (available at www.qsortware.net). It was decided to conduct the Q sort online as this would allow access to a wider range of participants through EPNET, thereby potentially revealing a wider range of viewpoints and ensuring a heterogenous group of participants, and also was considered to be an efficient method for collecting data. However, conducting the Q sort online meant that it was not possible to conduct follow-up interviews and therefore interpretation of the data provided a simple understanding of perspectives, which was deemed acceptable given the practical and pragmatic purposes of this research.

There were a number of technical issues and considerations with conducting the Q sort online. For example, Brown (1980) suggests a 9-point distribution (+4 to -4) for Q sets fewer than 40 and an 11-point distribution (+5 to -5) for Q sets between 40 and 60. This study used a Q set with 40 statements, however, a 9-point distribution was chosen as more appropriate for user-functionality given the online administration. In addition, a flattened quasi-normal distribution of statements was chosen as this "provides more opportunities for responses at the extremes of the distribution and reduces the number of those in the centre" (Brown, 1980, p.200). Furthermore, a number of participants and potential participants reported technical issues with the software programme (e.g. no functionality on mobile devices, screen freezes, and being unable to proceed to further stages in the Q sort). As a result, the final sample size of this study was smaller than initially desired though the sample size was still suitable for the purposes of a Q study (Webler, Danielson, & Tuler, 2009).

4.3.5.4 Methodology: Participant Selection

Watts and Stenner (2012) recommend that participants should be sampled through purposive sampling and should be identified "because of their special relevance to the goals of the study" (McKeown & Thomas, 2013, p.31). In addition, participants should have a "defined viewpoint to express" and be those whose "viewpoints matter in relation to the subject at hand" (Watts & Stenner, 2012, p.70). Therefore, EPs were recruited as participants via EPNET, an online forum described as a "forum for the exchange of ideas and information among University research/teaching staff working in the field of Educational Psychology" (EPNET, 2019). Participants in the pilot studies were recruited for 'ease of access'. Participants with a range of roles were included within the study (e.g. trainee EPs, main-grade EPs, senior EPs, principal EPs). This did not appear to impact upon a participant's perspective regarding practical and effective means of supporting implementation of well-being interventions. It could be argued that additional participant demographic information (e.g. length of time practising, qualification level, country of practice, employment status, private/Local Authority) may have revealed some differences in views and perspectives. However, there were no empirically valid reasons to hypothesise that perspectives would vary by EP demographics, and also specific differences in opinions were not the foci for this research, and therefore it was considered unnecessary to collect substantial demographic information in line with 2016 European Union General Data Protection Regulation (EU

GDPR) laws and principles regarding data minimisation (Information Commissioners Office, 2018).

4.3.5.5 Data Analysis: Factor Extraction and Rotation

PQMethod (Schmolck, 2014) is a software programme commonly used for data analysis in Q methodology (Akhtar-Danesh, 2016). PQMethod includes two factor extraction techniques: Centroid Factor Analysis (CFA) or Principal Components Analysis (PCA); and two factor rotation techniques: varimax rotation or manual rotation. Each method of factor extraction produces a set of orthogonal factors that replicate the correlation matrix between variables (Tabachnick & Fidell, 2001). PCA was chosen as an appropriate technique to reduce the scale and complexity of the dataset, thereby increasing the interpretability whilst simultaneously preserving sufficient variability in order to minimise the loss of information (Jolliffe & Cadima, 2016). Factor rotation is a process that reduces the complexity of the factor loadings to provide a set of easily interpretable factors (Akhtar-Danesh, 2016). Varimax rotation was chosen because manual rotation is subjective and therefore a less reliable technique (Akhtar-Danesh, 2016).

4.3.5.6 Interpretation of Findings

Watts and Stenner (2012) recommend a three-stage process for interpreting each factor: direct comparison of factor arrays, examination of significant statements onto each factor, and analysis of participant loadings onto each factor. This was used to create a factor array narrative, which provides an interpretation of each factor by describing key statements and their placement within the Q sort. The statement number (e.g. S2) and statement placement in each factor array narrative (e.g. +4) are referenced in order to maintain transparency and establish trustworthiness (Lincoln & Guba, 1985), and thereby allowing the reader to make his or her own judgement regarding the credibility of the conclusions.

4.3.6 Ethical Considerations

The researcher followed the Cardiff University ethical guidelines and the British Educational Research Association (BERA) ethical guidelines for educational research (BERA, 2011). Ethical approval was obtained from Cardiff University's School of Psychology Ethics Committee. Ethical issues were considered and accounted for prior to commencement of the research. As a result, the following decisions were taken:

- BERA (2011) recommends that "all participants in the research understand the process in which they are to be engaged, including why their participation is necessary, how it will be used and how and to whom it will be reported." (p.5). Participants in the Q sort pilot studies and the online Q sort were provided with an information sheet that informed them about the purpose of the study, data collection methods, data security etc. (see Appendices J and K). The information sheet was meticulously designed to provide the participants with enough information to make well-informed decisions regarding their participation, without being inundated with information and with minimal chance to cause bias in their responses.
- BERA (2011) also states the importance of voluntary informed consent of all participants. Participants in the pilot studies were made aware of the research through the Principal Educational Psychologist and participants in the online study were made aware of the research through EPNET. It was then the responsibility of any potential participant to contact the researcher. This was done in order to avoid making participants feel pressurised into making a decision about whether they wanted to participate. Participants were asked to sign a consent form prior to conducting the pilot Q studies and confirm their consent within the online Q study (see Appendices L and M). Participants were also given the option of withdrawing from the study at any point during the proceedings, as recommended by BERA (2011), and they were informed about how to do so. This allowed participants to reflect on their choices made during the Q sorts and consider whether they still wished for their data to be used.
- BERA (2011) also highlights the importance of protecting the privacy of participants. All data collected were transferred to a password protected folder on the researcher's personal computer and stored securely to help ensure the confidentiality of the participants and comply with the 2016 EU GDPR legislation (Information Commissioners Office, 2018). All data were anonymised during the writing process.
- Full details of the complaints procedure were provided within the participant information sheet and debrief sheet. These were compliant with Cardiff University procedures.

4.3.7 Dissemination Approaches

The dissemination of findings is an important aspect of conducting research (Wilson, Petticrew, Calnan, & Nazareth; 2010). It is intended that this research will be published as two distinct but associated papers (Wright, 2020a; Wright, 2020b) within peer-reviewed academic journals related to educational psychology, such as *Educational Psychology in Practice*. This will help ensure that the research is available to other EPs and interested parties. However, peer reviewed journals have a limited readership and publication within an academic journal is unlikely to reach non-research audiences (Brownson, Eyler, Harris, Moore, & Tabak, 2018) and therefore may not be easily visible to other key target audiences such as school staff. There are a number of alternative dissemination approaches that could be considered. For example: informal discussions, seminars and workshops, face-to-face meetings, websites, press releases, presentation at national conferences (Brownson et al., 2018). It is hoped that when the researcher is a practising EP he will have the opportunity to disseminate the findings directly to schools via informal discussions and to his colleagues via internal meetings, presentations, and conferences.

4.3.8 Development and Learning as a Researcher

This area of research felt particularly relevant and important to explore given the current context regarding mental health and well-being in schools. As a trainee EP, conducting this research encouraged a personal reflection regarding the role of the EP, and in particular highlighted the significant contribution that EPs can make towards supporting well-being in schools and the multi-faceted roles that EPs can adopt. The process of the entire research will undoubtedly influence the researcher and inform the researcher's professional practice as a fully qualified EP. For example, the researcher would feel much more comfortable with supporting a school to adopt a whole-school approach to well-being.

As a researcher, two methodologies were chosen (meta-analysis and Q methodology) with which the researcher did not have any prior experience. Initially, the researcher was hesitant to do so as he was aware of the significant difficulty and workload required to undertake such a task, especially given competing requirements of the DEdPsych programme. However, the researcher felt that he had the impetus, skills and knowledge from prior experiences as a researcher on the DEdPsych programme to conduct this research. In addition, the researcher wanted to challenge himself and to develop as a

researcher rather than choose an approach similar to ones that he had done previously, such as conducting interviews and thematic analysis. This allowed the researcher to develop a new set of technical skills and knowledge that appear to be rare within the EP profession. Overall, he felt able to co-adopt the role of researcher and trainee EP with relative ease, however there were numerous times when the roles competed for attention and resources.

The outcomes of the study, particularly those related to implementation efficacy, enabled the researcher to think much more carefully about the importance of supporting the high-quality implementation of all intervention within schools (e.g. monitoring literacy interventions). In addition, the outcomes of the research have highlighted the numerous practical procedures that EPs may utilise to collaborate with other professionals and engage systemically with schools. This research allowed the researcher to learn and develop significantly and the process and outcomes will influence his future practice as an educational psychologist.

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APPENDICES

Appendix A – Checklist of items to include when reporting a systematic review or meta-analysis

Checklist of items to include when reporting a systematic review or meta-analysis			
Section/Topic	**Item No.**	**Checklist Item**	**Page No.**
Title			
Title	1	Identify the report as a systematic review, meta-analysis or both	
Abstract			
Structured Summary	2	Provide a structured summary including, as applicable, background, objectives, data sources, study eligibility criteria, participants, interventions, study appraisal and synthesis methods, results, limitations, conclusions and implications of key findings, systematic review registration number	
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known	
Objectives	4	Provide an explicit statement of what is being addressed with reference to participants, interventions, comparisons, outcomes, and study designs (PICOS)	
Methods			
Protocol and Registration	5	Indicate if a review protocol exists, if and where it can be accessed (such as web address), and, if available, provide registration information including registration number	
Eligibility Criteria	6	Specify study characteristics (such as PICOS, length of follow-up) and report characteristics (such as years considered, language, publication status) used as criteria for eligibility, giving rationale	
Information Sources	7	Describe all information sources (such as databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	

Search	8	Present full electronic search strategy for at least one databased, including any limits used, such that it could be repeated	
Study Selection	9	State the process for selecting studies (that is, screening, eligibility, included in systematic review and, if applicable, included in the meta-analysis)	
Data Collection Process	10	Describe method of data extraction from reports (such as piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators	
Data Items	11	List and define all variables for which data were sought (such as PICOS, funding sources) and any assumptions and simplifications made	
Risk of Bias in Individual Studies	12	Describe methods used for assessing risk of bias in individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis	
Summary Measures	13	State the principal summary measures (such as risk ration, difference in means)	
Synthesis of Results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (such as I2) for each meta-analysis	
Risk of Bias Across Studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (such as publication bias, selective reporting within studies)	
Additional Analyses	16	Describe methods of additional analyses (such as sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified	
Results			
Study Selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram	
Study Characteristics	18	For each study, present characteristics for which data were extracted (such as study size,	

		PICOS, follow-up period) and provide the citations	
Risk of Bias Within Studies	19	Present data on the risk of bias of each study and, if available, any outcome-level assessment (see item 12)	
Results of Individual Studies	20	For all outcomes considered (benefits or harms), present for each study (a) simple summary data for each intervention group and (b) effect estimates and confidence intervals, ideally with a forest plot	
Synthesis of Results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency	
Risk of Bias Across Studies	22	Present results of any assessment of risk of bias across studies (see item 15)	
Additional Analysis	23	Give results of additional analyses, if done (such as sensitivity or subgroup analyses, meta-regression [see item 16])	
Discussion			
Summary of evidence	24	Summarise the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (such as health care providers, users, and policy makers)	
Limitations	25	Discuss limitations at study and outcome levels (such as risk of bias), and at review level (such as incomplete retrieval of identified research, reporting bias)	
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research	
Funding			
Funding	27	Describe sources of funding for the systematic review and other support (such as supply of data) and role of funders for the systematic review	
Table from Liberati et al. (2009)			

Appendix B – Record of Literature Searches

Date	Database	Search Term(s)	Inclusion / Exclusion Criteria	Results
110719	PsychINFO	PICOS	English language only	2011
110719	Medline	PICOS	English language only	534
110719	Social Policy and Practice	PICOS	English language only	40
120719	Cochrane Library	PICOS	English language only	341
120719	Web of Science	PICOS	English language only	182
120719	SCOPUS	PICOS	English language only	792
120719	ERIC	PICOS	English language only	39
120719	British Education Index and Child Development & Adolescent Studies	PICOS	English language only	22
120719	ASSIA and IBSS	PICOS	English language only	54
120719	PubMed	PICOS	English language only	21
150719	PsycINFO	PICOS	English language only	425

150719	Medline	PICOS	English language only	95
150719	Social Policy and Practice	PICOS	English language only	14
150719	Cochrane Library	PICOS	English language only	4
150719	Web of Science	PICOS	English language only	9
150719	ASSIA IBSS	PICOS	English language only	96
150719	ERIC BEI Medline Child Development and Adolescent Studies	PICOS	English language only	717
150719	SCOPUS	PICOS	English language only	130
150719	PubMed	PICOS	English language only	108

Appendix C – Data Extraction Sheet

Summary of study characteristics					
Source	**Population (description, setting, age)**	**Intervention (description, administrators, timing, delivery)**	**Comparison**	**Outcomes (measures, timing, instruments)**	**Study Design**

Appendix D – Pilot Q Study Statements

1. Educational psychologists can deliver a training session(s) to all school-staff regarding evidence-based well-being interventions (e.g. those based upon ACT, positive psychology, CBT).
2. Educational psychologists can deliver training to a school's SENCo/ALNCo regarding evidence-based well-being interventions (e.g. those based upon ACT, positive psychology, CBT).
3. Educational psychologists can deliver training to a school's senior leaders regarding evidence-based well-being interventions (e.g. those based upon ACT, positive psychology, CBT).
4. Educational psychologists can develop and deliver bespoke training packages for each school regarding implementing evidence-based well-being interventions.
5. Educational psychologists can provide training to all school-staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating etc.)
6. Educational psychologists can provide training to ensure that a school understands the theoretical basis of a well-being intervention.
7. Educational psychologists can support schools to implement a well-being intervention by providing teacher training and support, and support resources, to develop the skills and confidence necessary for effective programme delivery.
8. Educational psychologists can develop bespoke support resources that a school can implement to support well-being.
9. Educational psychologists can appraise well-being interventions and approaches in order to ensure that recommendations provided to schools are evidence-informed.
10. Educational psychologists can deliver universal whole-school well-being interventions (e.g. through school assemblies, within lessons etc.)
11. Educational psychologists can deliver targeted group well-being interventions (e.g. a series of sessions with an identified group of students and/or school-staff).
12. Educational psychologists can deliver targeted individual well-being interventions (e.g. a series of sessions with an identified student or member of staff).

13. Educational psychologists can develop bespoke approaches to supporting well-being by working collaboratively with a school's senior leaders and/or SENCo/ALNCo.
14. Educational psychologists can develop bespoke approaches to supporting well-being by working collaboratively with a task group from the school (e.g. one that includes representatives from the teaching staff, students, and school leaders).
15. Educational psychologists can develop approaches to supporting well-being in schools by working collaboratively with relevant individuals and/or teams within the Local Authority.
16. Educational Psychology Services can have a designated well-being lead who oversees supporting all schools within the Local Authority.
17. Educational psychologists can support schools to monitor the implementation quality of a well-being intervention (e.g. ensuring necessary levels of intensity, ensuring consistent and clear adherence to the programme, developing an understanding of which elements are essential for change and must be implemented as designed and which may be safely adapted to the local context).
18. Educational psychologists can support schools to ensure that well-being interventions are chosen which include: (i) Sequenced activities that lead in a coordinated, connected way to the development of skills (ii) Active forms of learning (e.g. experiential) (iii) Focused on developing one or more social and emotional skills (iv) Explicit about targeting specific skills (e.g. self-awareness, self-management, social awareness and relationship skills, and responsible decision making).
19. Educational psychologists can work with schools to ensure that school-staff agree to and approve of well-being programmes and interventions before implementation (e.g. by providing training regarding the links between well-being and academic performance).
20. Educational psychologists can work with schools to ensure that parents agree to and approve of well-being programmes and interventions before implementation (e.g. by providing training regarding the links between well-being and health outcomes).
21. Educational psychologists can support schools to involve families and communities within well-being programmes to reinforce the messages that young people are learning at school.

22. Educational psychologists can support schools to establish assessment and accountability systems for well-being programs in relation to student outcomes.
23. Educational psychologists can ensure that schools are able to identify evidence-based well-being programs and will choose these from among alternatives.
24. Educational psychologists can support schools to plan the implementation of an intervention (e.g. integration within the school ethos and curriculum, methods of delivery, program intensity etc.)
25. Educational psychologists can ensure that schools continue to implement well-being interventions after initial training, demonstration, and/or piloting through the use of regular update meetings.
26. Educational psychologists can disseminate information about available well-being intervention programs (e.g. through training, websites, information leaflets, informal discussions etc.)
27. Educational psychologists can support schools to develop well-designed goals using a co-ordinated and sequenced approach to achieving their objectives related to skill development.
28. Educational psychologists can support schools to do effective program evaluation to assess progress toward desired goals.
29. Educational psychologists can be available to provide technical assistance to schools throughout the implementation process in order to provide support and address any occurring issues.
30. Educational psychologists can support schools with methods to sustain beneficial interventions over the long term.
31. Educational psychologists can support schools on specific issues such as where to start, how to set measurable goals and evaluate them, and the need to prioritise, to phase in changes slowly and ensure that they are properly embedded before going on to the next.
32. Educational psychologists can ensure that schools only undertake interventions that fit the local context and that schools can easily implement with fidelity and rigour.
33. Educational psychologists can support schools to implement bespoke well-being interventions that account for the contextual challenges and pressures faced by the young people in the school community and best fit with local settings.
34. Educational psychologists can support schools to integrate well-being into their core culture, ethos, and environment (e.g. by developing whole-school values).

35. Educational psychologists can work with schools to develop a position for a mental health and well-being lead within the school.
36. Educational psychologists can support schools to develop a mental health and well-being policy and action plan.
37. Educational psychologists can work with school senior leaders to develop a systemic approach throughout the whole school organisation that accounts for contextual factors such as level of engagement and co-operation from students, teacher and parents.
38. Educational psychologists can support schools to integrate well-being interventions and programmes into the academic curriculum.
39. Educational psychologists can support schools to adopt comprehensive skills-based programmes that employs both universal and targeted well-being interventions within a robust universal approach to well-being.
40. Educational psychologists can support schools to become independent with the implementation of their well-being interventions.
41. Educational psychologists can support schools to make use of competence enhancement strategies and empowering approaches, including interactive teaching methods, classroom interaction, games, simulations and groupwork of various kinds.

Appendix E – Summary of Feedback from Pilot Studies

Pilot 1 Feedback:

Additional statements to include:

- A statement about the practicality of interventions (e.g. choosing practical interventions).
- A statement that clarifies whether EPs get training regarding the intervention beforehand (e.g. feeling more comfortable delivering ACT if trained in ACT).
- A statement regarding needs analysis.
- A statement regarding practice based evidence.
- A statement regarding specific ways of supporting cultures and practices (e.g. supporting teachers in the classroom environment).
- A statement regarding soft systems work with SLT re. wellbeing (e.g. thinking big, rich picture, SWOT analysis).
- A statement regarding strategic and conceptual understanding of wellbeing with SLT.
- A statement regarding EP identifying needs and identifying targets of interventions.
- A statement regarding how EPs interpret the evidence base.
- A statement regarding EPs and agenda of SLT.
- A statement regarding EPs and agenda/needs of the community.
- A statement regarding EPs help SLT to see what they're already doing right, help school find signs that things are working.

Additional comments:

- Change wording of least/most useful to least/most effective and practical.
- Write EP rather than educational psychologist.
- Check for duplicates regarding whole school approaches/goal setting outcomes/ bespoke support.
- Be more explicit with the statements.
- Some statements need more context and examples for clarification, however it is important to decide whether having lots of examples are necessary.
- Each statement should only include one clause.
- The statements are too long.
- There are (almost) too many statements.

Pilot 2 Feedback:

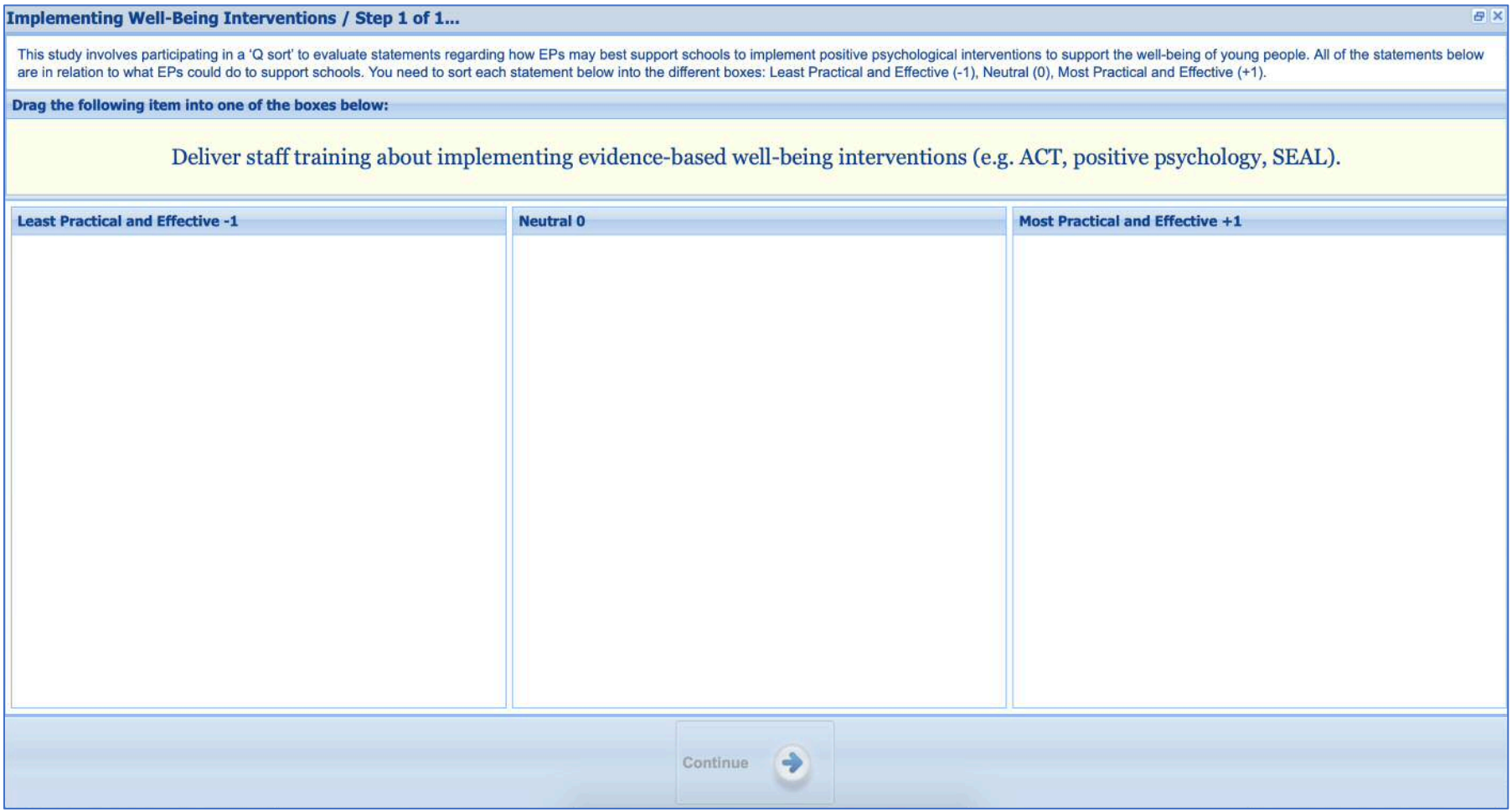
Additional statements to include:

- A statement regarding higher level strategic work (e.g. attending an all Wales SEMH group).
- A statement regarding multi-agency working or collaborative working.
- A statement about EPs ensuring that interventions are evidence-based (e.g. through CPD).
- A statement about EPs trialling and monitoring interventions.

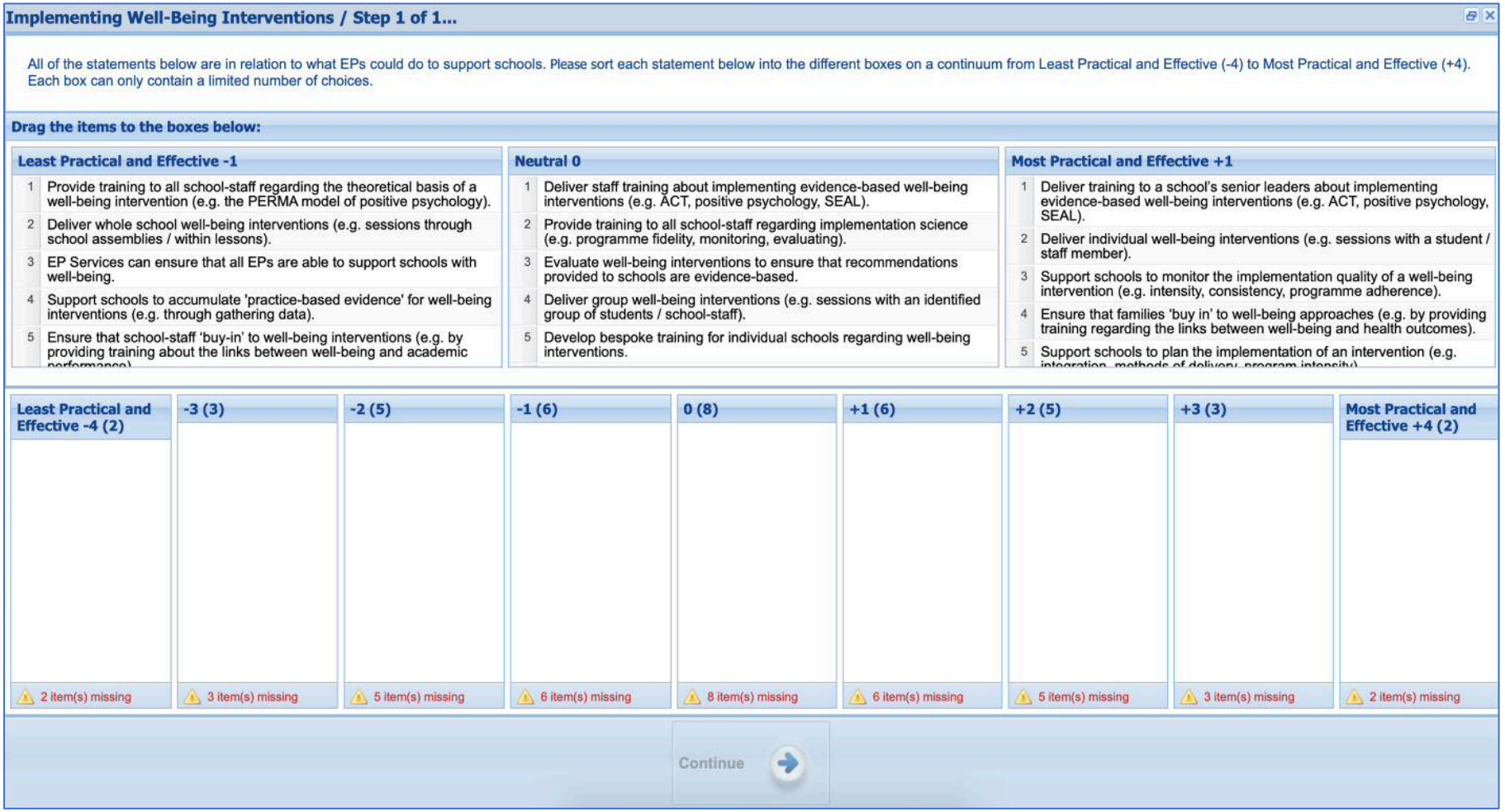
Additional comments:

- Lots of the statements depend upon conceptualisation of the EP role, LA role, LA improvement plans, and school improvement plans.
- Have an opportunity at the end of the Q sort for comments and maybe a space to reference a particular statement.
- The statements are quite long.
- There are a lot of statements.

Appendix F – Online Q Sort (Initial)



Appendix G – Online Q Sort (Final)



Appendix H – Q Sort Factor Array for Each Statement

Factor Arrays for Each Statement					
Statement Number	**Statement**	**Factor 1**	**Factor 2**	**Factor 3**	**Factor 4**
1	Deliver staff training about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL).	-1	4	-2	4
2	Deliver training to a school's senior leaders about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL).	3	0	-1	3
3	Provide training to all school-staff regarding the theoretical basis of a well-being intervention (e.g. the PERMA model of positive psychology).	-2	-2	-2	1
4	Provide training to all school-staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating).	-3	-4	-3	0
5	Evaluate well-being interventions to ensure that recommendations provided to schools are evidence-based.	-1	1	-2	2
6	Deliver whole school well-being interventions (e.g. sessions through school assemblies / within lessons).	-4	-3	1	0
7	Deliver group well-being interventions (e.g. a series of sessions with an identified group of students and/or school-staff).	-3	3	2	0

8	Deliver individual well-being interventions (e.g. sessions with a student/staff member).	-3	-1	2	2
9	Develop bespoke training for each school regarding well-being interventions.	2	2	0	3
10	Work collaboratively with a task group from the school to develop well-being approaches.	3	1	1	4
11	Work collaboratively with relevant individuals and teams within the Local Authority.	4	1	-1	0
12	EP Services can have a designated well-being lead who oversees supporting all schools.	-2	2	-3	-4
13	EP Services can ensure that all EPs are able to support schools with well-being.	1	2	4	-1
14	Support schools to monitor the implementation quality of a well-being intervention (e.g. intensity, consistency, programme adherence).	0	0	0	1
15	Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data).	0	-3	-4	1
16	Support schools to ensure well-being interventions are implemented which include: (i) Sequenced activities (ii) Active forms of learning (iii) Focused on developing skills (iv) Explicit about targeting specific skills.	-2	1	-2	-1

17	Ensure school-staff 'buy-in' to well-being interventions and programmes (e.g. by providing training about the links between well-being and academic performance).	1	2	-1	-3
18	Ensure that families 'buy in' to well-being approaches (e.g. by providing training regarding the links between well-being and health outcomes).	0	3	-2	-3
19	Support schools to involve families and communities within well-being approaches (e.g. by consulting with parents and carers).	0	4	2	1
20	Ensure that schools are able to identify evidence-based well-being interventions (e.g. positive psychology, CBT).	-1	1	-4	0
21	Support schools to plan the implementation of an intervention (e.g. integration, methods of delivery, program intensity).	0	-1	0	3
22	Ensure schools persist when implementing interventions (e.g. through regular update meetings).	-1	2	0	-2
23	Disseminate information about well-being approaches (e.g. through consultation, websites, information leaflets, informal discussions).	0	-2	-1	-1
24	Support schools to evaluate well-being interventions (e.g. assessing progress towards specific outcomes).	1	1	-1	2
25	Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress).	-2	-4	-3	-4

26	Ensure the adoption of well-being approaches that are sensitive to the local context.	-2	-2	-1	-2
27	Support schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness).	3	0	4	-1
28	Support schools to develop the role of 'well-being leads'	1	0	1	-1
29	Support schools to develop a well-being policy/action plan	1	0	0	1
30	Support schools to integrate well-being approaches into the academic curriculum.	-1	-2	0	-2
31	Guide schools in adopting well informed whole school well-being approaches that function at both targeted and universal levels.	2	-1	3	0
32	Ensure the adoption of well-being approaches that schools are able to implement with fidelity and rigour (e.g. simple to implement).	0	-1	2	-2
33	Directly support schools to implement well-being practices (e.g. supporting teachers in the classroom).	-4	0	0	-1
34	Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH).	4	-2	3	2
35	Explore the strategic and conceptual understanding of well-being with senior leaders.	2	-1	1	-2

36	Explore the well-being needs of the local community.	0	-3	2	-3
37	Identify the well-being needs of children and young people in schools.	-1	3	1	1
38	Explore with school senior leaders existing practices that promote well-being.	2	0	0	0
39	Support schools to prioritise staff well-being (e.g. implementing staff well-being interventions).	2	0	0	2
40	Explore with senior leaders the willingness to adopt whole school change regarding well-being.	1	-1	3	0

Appendix I – Factor Interpretation Crib Sheets

Note: blue highlight indicates significance at p < 0.01, yellow highlight indicates significance at p < 0.05.

Factor interpretation crib sheet for Factor 1	
	Statements and Ranking
Items Ranked at +4	(S11) Work collaboratively with relevant individuals and teams within the Local Authority. (S34) Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH).
Items Ranked at +3	(S2) Deliver training to a school's senior leaders about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). (S10) Work collaboratively with a task group from the school to develop well-being approaches. (S27) Support schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness).
Items Ranked Higher in Factor 1 than in other Factor Arrays	(S11) (+4) Work collaboratively with relevant individuals and teams within the Local Authority. (S23) (0) Disseminate information about well-being approaches (e.g. through consultation, websites, information leaflets, informal discussions). (S25) (-2) Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress). (S34) (+4) Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH). (S35) (+1) Explore the strategic and conceptual understanding of well-being with senior leaders. (S38) (+2) Explore with school senior leaders existing practices that promote well-being.

Items Ranked Lower in Factor 1 than in other Factor Arrays	(S6) (-4) Deliver whole school well-being interventions (e.g. sessions through school assemblies / within lessons). (S7) (-3) Deliver group well-being interventions (e.g. a series of sessions with an identified group of students and/or school-staff). (S19) (0) Support schools to involve families and communities within well-being approaches (e.g. by consulting with parents and carers). (S33) (-4) Directly support schools to implement well-being practices (e.g. supporting teachers in the classroom). (S37) (-1) Identify the well-being needs of children and young people in schools.
Items Ranked at -3	(S4) Provide training to all school-staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). (S7) Deliver group well-being interventions (e.g. a series of sessions with an identified group of students and/or school-staff). (S8) Deliver individual well-being interventions (e.g. sessions with a student/staff member).
Items Ranked at -4	(S6) Deliver whole school well-being interventions (e.g. sessions through school assemblies / within lessons). (S33) (-4) Directly support schools to implement well-being practices (e.g. supporting teachers in the classroom).

Factor interpretation crib sheet for Factor 2	
	Statements and Ranking
Items Ranked at +4	(S1) Deliver staff training about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). (S19) Support schools to involve families and communities within well-being approaches (e.g. by consulting with parents and carers).
Items Ranked at +3	(S7) Deliver group well-being interventions (e.g. a series of sessions with an identified group of students and/or school-staff). (S18) Ensure that families 'buy in' to well-being approaches (e.g. by providing training regarding the links between well-being and health outcomes).

	(S37) Identify the well-being needs of children and young people in schools.
Items Ranked Higher in Factor 2 than in other Factor Arrays	(S7) (+3) Deliver group well-being interventions (e.g. a series of sessions with an identified group of students and/or school-staff). (S12) (+2) EP Services can have a designated well-being lead who oversees supporting all schools. (S16) (+1) Support schools to ensure well-being interventions are implemented which include: (i) Sequenced activities (ii) Active forms of learning (iii) Focused on developing skills (iv) Explicit about targeting specific skills. (S17) (+2) Ensure school-staff 'buy-in' to well-being interventions and programmes (e.g. by providing training about the links between well-being and academic performance). (S18) (+3) Ensure that families 'buy in' to well-being approaches (e.g. by providing training regarding the links between well-being and health outcomes). (S19) (+4) Support schools to involve families and communities within well-being approaches (e.g. by consulting with parents and carers). (S20) (+1) Ensure that schools are able to identify evidence-based well-being interventions (e.g. positive psychology, CBT). (S22) (+2) Ensure schools persist when implementing interventions (e.g. through regular update meetings). (S37) (+3) Identify the well-being needs of children and young people in schools.
Items Ranked Lower in Factor 2 than in other Factor Arrays	(S4) (-4) Provide training to all school-staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). (S23) (??)Disseminate information about well-being approaches (e.g. through consultation, websites, information leaflets, informal discussions). (S31) (-1) Guide schools in adopting well informed whole school well-being approaches that function at both targeted and universal levels. (S34) (-2) Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH). (S40) (-1) Explore with senior leaders the willingness to adopt whole school change regarding well-being.
Items Ranked at -3	(S6) Deliver whole school well-being interventions (e.g. sessions through school assemblies / within lessons).

	(S15) Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data). (S36) Explore the well-being needs of the local community.
Items Ranked at -4	(S4) Provide training to all school-staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). (S25) Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress).

Factor interpretation crib sheet for Factor 3	
	Statements and Ranking
Items Ranked at +4	(S13) EP Services can ensure that all EPs are able to support schools with well-being. (S27) Support schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness).
Items Ranked at +3	(S31) Guide schools in adopting well informed whole school well-being approaches that function at both targeted and universal levels. (S34) Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH). (S40) Explore with senior leaders the willingness to adopt whole school change regarding well-being.
Items Ranked Higher in Factor 3 than in other Factor Arrays	(S13) (+4) EP Services can ensure that all EPs are able to support schools with well-being. (S26) (-1) Ensure the adoption of well-being approaches that are sensitive to the local context. (S27) (+4) Support schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness). (S30) (0) Support schools to integrate well-being approaches into the academic curriculum. (S31) (+3) Guide schools in adopting well informed whole school well-being approaches that function at both targeted and universal levels.

	(S32) (+2) Ensure the adoption of well-being approaches that schools are able to implement with fidelity and rigour (e.g. simple to implement). (S36) (+2) Explore the well-being needs of the local community.
Items Ranked Lower in Factor 3 than in other Factor Arrays	(S5) (-2) Evaluate well-being interventions to ensure that recommendations provided to schools are evidence-based. (S9) (0) Develop bespoke training for each school regarding well-being interventions. (S11) (-1) Work collaboratively with relevant individuals and teams within the Local Authority. (S15) (-4) Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data). (S20) (-4) Ensure that schools are able to identify evidence-based well-being interventions (e.g. positive psychology, CBT). (S21) (-1) Support schools to plan the implementation of an intervention (e.g. integration, methods of delivery, program intensity). (S24) (-1) Support schools to evaluate well-being interventions (e.g. assessing progress towards specific outcomes).
Items Ranked at -3	(S4) Provide training to all school-staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). (S12) EP Services can have a designated well-being lead who oversees supporting all schools. (S25) Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress).
Items Ranked at -4	(S15) Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data). (S20) Ensure that schools are able to identify evidence-based well-being interventions (e.g. positive psychology, CBT).

Factor interpretation crib sheet for Factor 4	
	Statements and Ranking
Items Ranked at +4	(S1) Deliver staff training about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL).

	(S10) Work collaboratively with a task group from the school to develop well-being approaches.
Items Ranked at +3	(S2) Deliver training to a school's senior leaders about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). (S9) Develop bespoke training for each school regarding well-being interventions. (S21) Support schools to plan the implementation of an intervention (e.g. integration, methods of delivery, program intensity).
Items Ranked Higher in Factor 4 than in other Factor Arrays	(S3) (+1) Provide training to all school-staff regarding the theoretical basis of a well-being intervention (e.g. the PERMA model of positive psychology). (S4) (0) Provide training to all school-staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). (S5) (2) Evaluate well-being interventions to ensure that recommendations provided to schools are evidence-based. (S6) (0) Deliver whole school well-being interventions (e.g. sessions through school assemblies / within lessons). (S9) (+3) Develop bespoke training for each school regarding well-being interventions. (S10) (+4) Work collaboratively with a task group from the school to develop well-being approaches. (S14) (+1) Support schools to monitor the implementation quality of a well-being intervention (e.g. intensity, consistency, programme adherence). (S15) (+1) Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data). (S21) (+3) Support schools to plan the implementation of an intervention (e.g. integration, methods of delivery, program intensity). (S24) (+2) Support schools to evaluate well-being interventions (e.g. assessing progress towards specific outcomes).
Items Ranked Lower in Factor 4 than in other Factor Arrays	(S13) (-1) EP Services can ensure that all EPs are able to support schools with well-being. (S17) (-3) Ensure school-staff 'buy-in' to well-being interventions and programmes (e.g. by providing training about the links between well-being and academic performance).

	(S18) (-3) Ensure that families 'buy in' to well-being approaches (e.g. by providing training regarding the links between well-being and health outcomes). (S22) (-2) Ensure schools persist when implementing interventions (e.g. through regular update meetings). (S27) (-1) Support schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness). (S28) (-1) Support schools to develop the role of 'well-being leads'. (S32) (-2) Ensure the adoption of well-being approaches that schools are able to implement with fidelity and rigour (e.g. simple to implement). (S35) (-2) Explore the strategic and conceptual understanding of well-being with senior leaders.
Items Ranked at -3	(S17) Ensure school-staff 'buy-in' to well-being interventions and programmes (e.g. by providing training about the links between well-being and academic performance). (S18) Ensure that families 'buy in' to well-being approaches (e.g. by providing training regarding the links between well-being and health outcomes). (S36) Explore the well-being needs of the local community.
Items Ranked at -4	(S12) EP Services can have a designated well-being lead who oversees supporting all schools. (S25) Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress).

Appendix J – Pilot Q Study Participant Information Sheet

Implementing effective positive psychological interventions within schools to support the well-being of young people

Information Sheet – Pilot Study

You have been invited to take part in a pilot study that involves participating in a 'Q sort' to evaluate statements regarding how educational psychologists may best support schools to implement positive psychological interventions to support the well-being of young people. You will be asked to rank-order a series of statements. After this, you will be asked to discuss and evaluate the activity. Before you decide whether you would like to take part, it is important that you understand why the research is being conducted and what it would involve for you. Please take time to read the following information. Please feel free to ask the researcher if anything is unclear or if you would like any further information.

What is the purpose of the study?

To explore how EPs may best support schools to implement effective positive psychological interventions to support the well-being of young people.

In this research you will participate in a Q sort, which is a process for evaluating statements and gaining perspectives. This process will be used to develop a consensus regarding how EPs may best support schools to implement effective well-being interventions.

In addition, the purpose of the pilot study is to generate additional ideas about how best to support schools to implement well-being interventions and also to discuss and evaluate the research process.

Why have I been invited?

You have been invited because you are a practicing educational psychologist and are considered an 'expert' regarding helping schools to support the well-being of their young people.

Do I have to take part?

Participation in this study is completely voluntary, and you can still choose not to participate if you prefer. Also, you may withdraw at any stage of this study, without being penalised or disadvantaged in any way.

Once the Q sort has been completed you will not be able to have your data withdrawn from the pilot study.

It is up to you to decide whether or not to take part. If you decide to take part, you will be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time up until submitting your Q sort and without giving a reason.

What will happen if I take part?

Participation involves conducting a Q sort, which will last for up to one hour. During the Q sort, you will be asked to rank-order statements regarding how best to support schools to implement effective interventions.

In addition, you will be asked to discuss and evaluate the Q sort activity.

What are the possible benefits of taking part?

This process will help you to reflect upon how EPs can support schools in a myriad of ways and will also provide an opportunity to have your perspective taken into account regarding the topic being researched. Also, your responses will be extremely useful for helping the researcher to understand how best to support schools to implement effective interventions.

What will happen when the research study stops?

The data will be stored securely on a password protected folder on the Cardiff University OneDrive and will only be accessible to the researcher. Your name and any other personal identifiable data will not be recorded and your data will be stored confidentially until the research has been submitted and approved and the degree of Doctor of Educational Psychology has been awarded, at which point the data will be stored for up to five years before being destroyed.

What will happen to the results of the research study?

The results of the research study will be used to write a thesis for the Doctorate in Educational Psychology programme at Cardiff University. It is hoped that the summary results of this study will be published in a psychology journal. You will not be identified during any stage of the publication process.

The researcher will provide you with a report that presents an overall summary of the main findings of this study if you so wish. At your request, this report will be sent to you by email once the research has been written into an appropriate format.

What if I have question or concerns about the study?

If you have any problems, concerns or questions about this study, you should ask to speak to a member of the research team (contact details below).

If you remain unhappy and wish to complain formally, you can do this through the Cardiff University Psychology Ethics Committee (psychethics@cardiff.ac.uk) or through the Cardiff University formal complaints procedure. Inform them that the name of the project is: **Implementing effective positive psychological interventions within schools to support the well-being of young people**

Who has reviewed the study?

This study has been approved by Cardiff University Department of Psychology Ethics Committee.

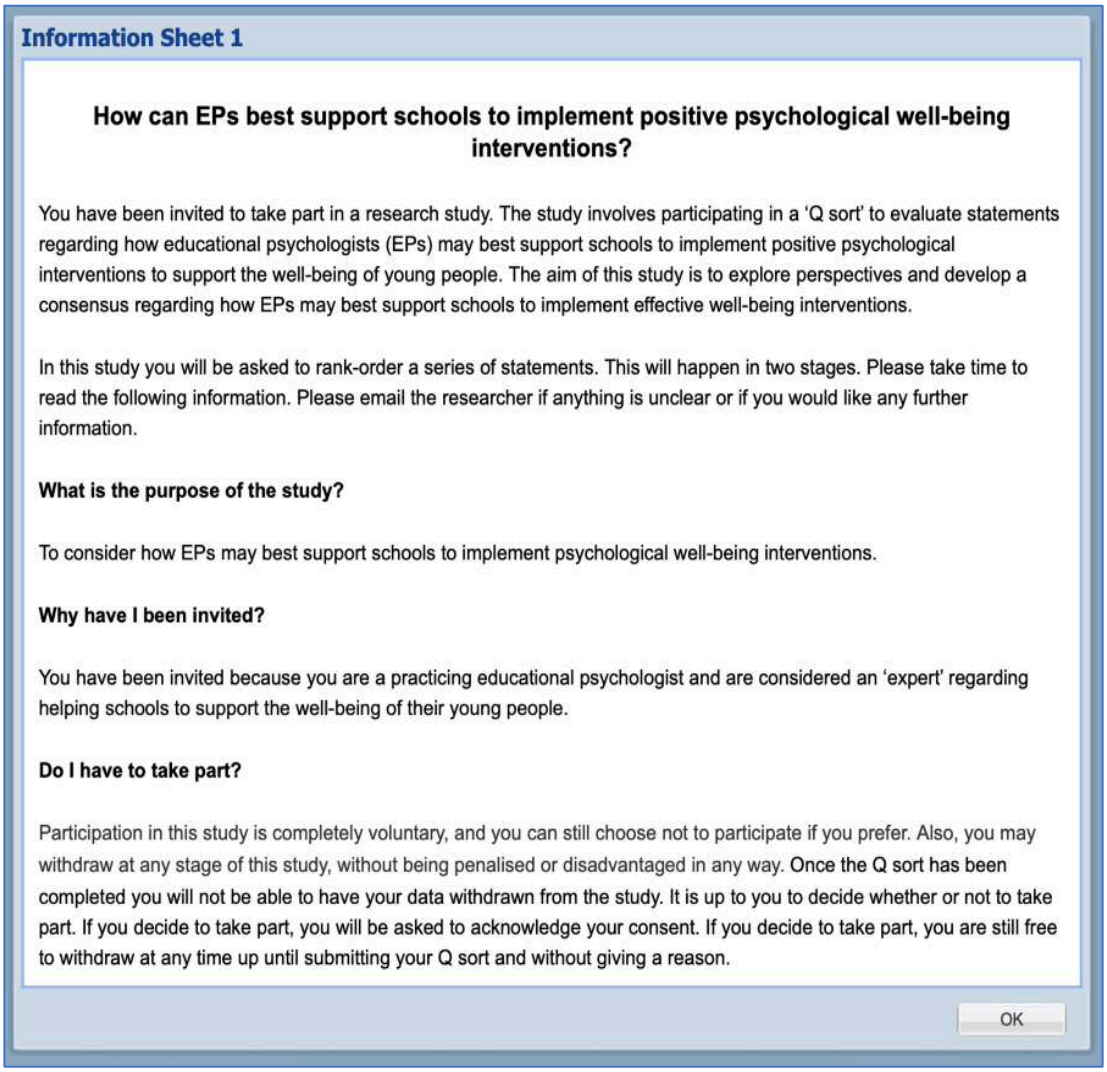
Further information and contact details

If you have any questions about the study, please contact:

Researcher - David Wright (WrightDL@cardiff.ac.uk)
Research Supervisor – Dr. Amy Hamilton-Roberts (Hamilton-RobertsA1@cardiff.ac.uk)

Thank you for taking the time to read this information sheet.

Appendix K – Online Q Study Participant Information



Information Sheet 1

How can EPs best support schools to implement positive psychological well-being interventions?

You have been invited to take part in a research study. The study involves participating in a 'Q sort' to evaluate statements regarding how educational psychologists (EPs) may best support schools to implement positive psychological interventions to support the well-being of young people. The aim of this study is to explore perspectives and develop a consensus regarding how EPs may best support schools to implement effective well-being interventions.

In this study you will be asked to rank-order a series of statements. This will happen in two stages. Please take time to read the following information. Please email the researcher if anything is unclear or if you would like any further information.

What is the purpose of the study?

To consider how EPs may best support schools to implement psychological well-being interventions.

Why have I been invited?

You have been invited because you are a practicing educational psychologist and are considered an 'expert' regarding helping schools to support the well-being of their young people.

Do I have to take part?

Participation in this study is completely voluntary, and you can still choose not to participate if you prefer. Also, you may withdraw at any stage of this study, without being penalised or disadvantaged in any way. Once the Q sort has been completed you will not be able to have your data withdrawn from the study. It is up to you to decide whether or not to take part. If you decide to take part, you will be asked to acknowledge your consent. If you decide to take part, you are still free to withdraw at any time up until submitting your Q sort and without giving a reason.

OK

Information Sheet 2

How can EPs best support schools to implement positive psychological well-being interventions?

What will happen if I take part?

Participation involves conducting a Q sort, which will last for around 30 minutes. During the Q sort, you will be asked to rank-order statements regarding how EPs may best support schools to implement effective interventions. This will happen in two stages. Stage One will involve sorting statements into three boxes (Least practical and Effective (-1), Neutral (0), Most Practical and Effective (+1)). Stage Two will involve sorting statements in multiple boxes (a continuum from Least Practical and Effective (-4) to Most Practical and Effective (+4)).

What will happen to my data and personal information?

Your email address will be recorded along with your submitted data. Your data and email address will be stored securely on a password protected folder on the Cardiff University OneDrive and will only be accessible to the researcher. Your data and email address will not be used for any other purposes other than this research. All your data and personal details will be stored confidentially until the research has been submitted and approved and the degree of Doctor of Educational Psychology has been awarded, after which point all data will be destroyed. No other personal data will be recorded or stored.

What will happen to the results of the research study?

The results of the research study will be used to write a thesis for the Doctorate in Educational Psychology programme at Cardiff University. It is hoped that the summary results of this study will be published in a psychology journal. You will not be identified during any stage of the publication process. The researcher will provide you with a report that presents an overall summary of the main findings of this study if you so wish. At your request, this report will be sent to you by email once the research has been written into an appropriate format.

OK

Information Sheet 3

How can EPs best support schools to implement positive psychological well-being interventions?

What if I have question or concerns about the study?

If you have any problems, concerns or questions about this study, you should ask to speak to a member of the research team (contact details below).

If you remain unhappy and wish to complain formally, you can do this through the Cardiff University Psychology Ethics Committee (psychethics@cardiff.ac.uk) or through the Cardiff University formal complaints procedure. Inform them that the name of the project is: *Implementing effective positive psychological interventions within schools to support the well-being of young people*

Who has reviewed the study?

This study has been approved by Cardiff University Department of Psychology Ethics Committee.

Further information and contact details

If you have any questions about the study, please contact:

David Wright (researcher) - wrightdl@cardiff.ac.uk

Amy Hamilton-Roberts (Research Supervisor) - hamilton-robertsa1@cardiff.ac.uk

OK

Appendix L – Pilot Q Study Participant Consent Form

Implementing effective positive psychological interventions within schools to support the well-being of young people

Pilot Study Consent Form

Please initial box

1.	I agree to take part in the above Cardiff University research project. I have had the project explained to me, and I have read the participant information sheet, which I may keep for my records. I understand this will involve: • Participating in a Q-Sort activity to rank-order a series of statements, followed by a discussion and evaluation of the activity.	
2.	This information will be held and processed only for the purposes of this specific research study. I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party. No identifiable personal data will be published. Identifiable personal data will not be shared with any other organisation.	
3.	I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, that I can withdraw at any stage of the project up until the end of the data collection process, and that I can choose not to participate in the project or I can withdraw from the project without being penalised or disadvantaged in any way.	

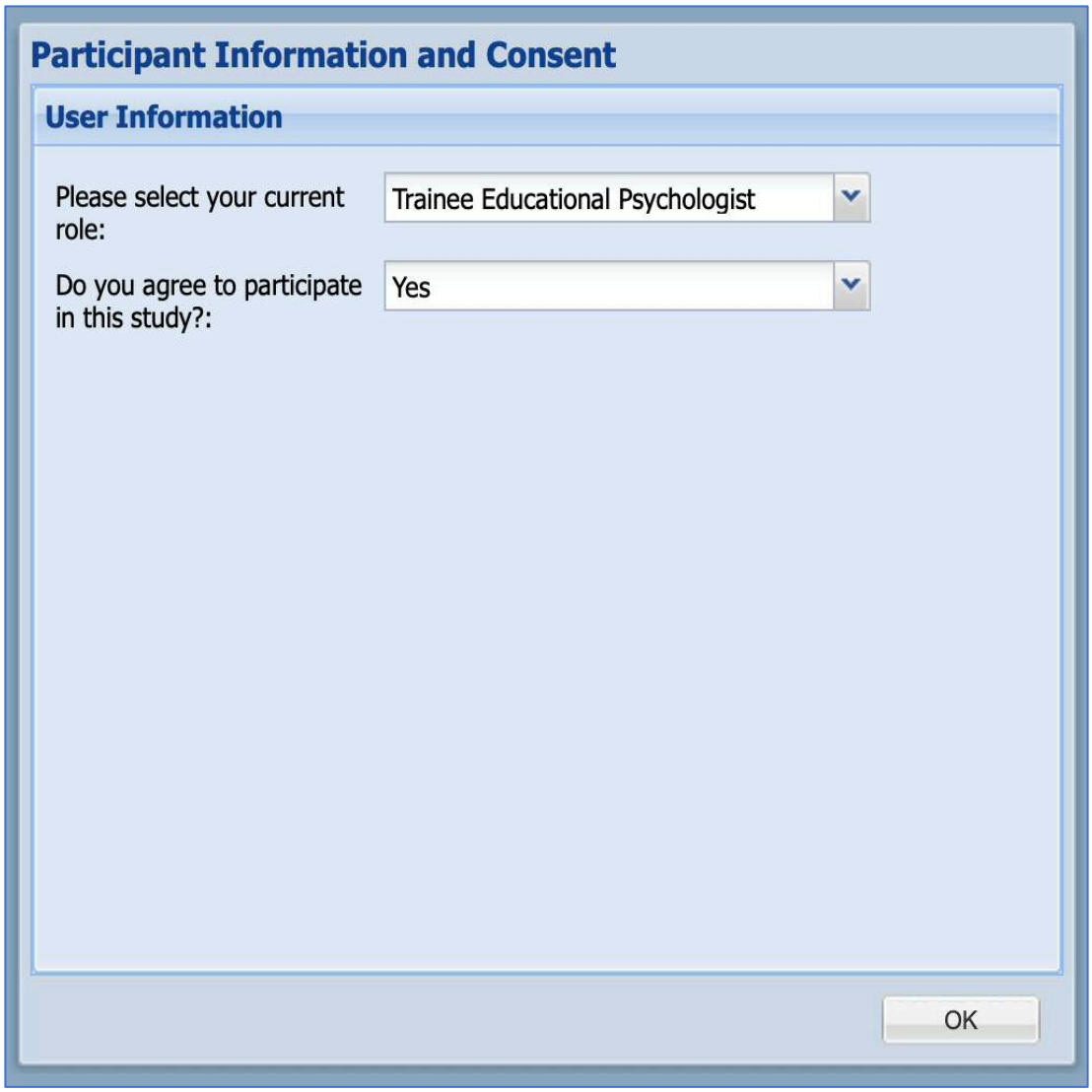
4.	I agree to Cardiff University recording and processing this information about me. I understand that this information will be used only for the purpose(s) set out in this statement and my consent is conditional on the University complying with its duties and obligations under the Data Protection Act 1998.	
5.	I agree to take part in this study.	

_____	_____	_____
Name of Participant	Signature	Date

_____	_____	_____
Name of Researcher	Signature	Date

When completed, 1 copy for participant; 1 copy for researcher file.

Appendix M – Online Q Study Participant Consent



Appendix N – Pilot Study Participant Debrief Sheet

Implementing effective positive psychological interventions within schools to support the well-being of young people

Participant Debrief Sheet

Overview

The purpose of this research is to consider how EPs may best support schools to implement effective positive psychology interventions to support the well-being of young people.

How did the research take place?

In this research you participated in a Q sort, which is a process for evaluating statements and gaining perspectives. This process was used to develop a consensus regarding how EPs may best support schools to implement effective interventions.

Key areas of interest

The researcher was particularly interested in identifying pragmatic methods that EPs could use to support schools to implement effective interventions and also to consider possible challenges when doing so.

Why is this an important topic to research?

Positive psychology is a psychological model that may be able to support schools in developing sustained and effective practices to promote psychological well-being. This research will add to a growing body of literature that supports evidence-based, whole school approaches for the well-being of school staff, parents and young people.

What should I do if I want to know more?

If you wish to know more about the research process, then please contact the researcher. If you wish to know more about positive psychology, then there is information available online. For example: www.ppc.sas.upenn.edu

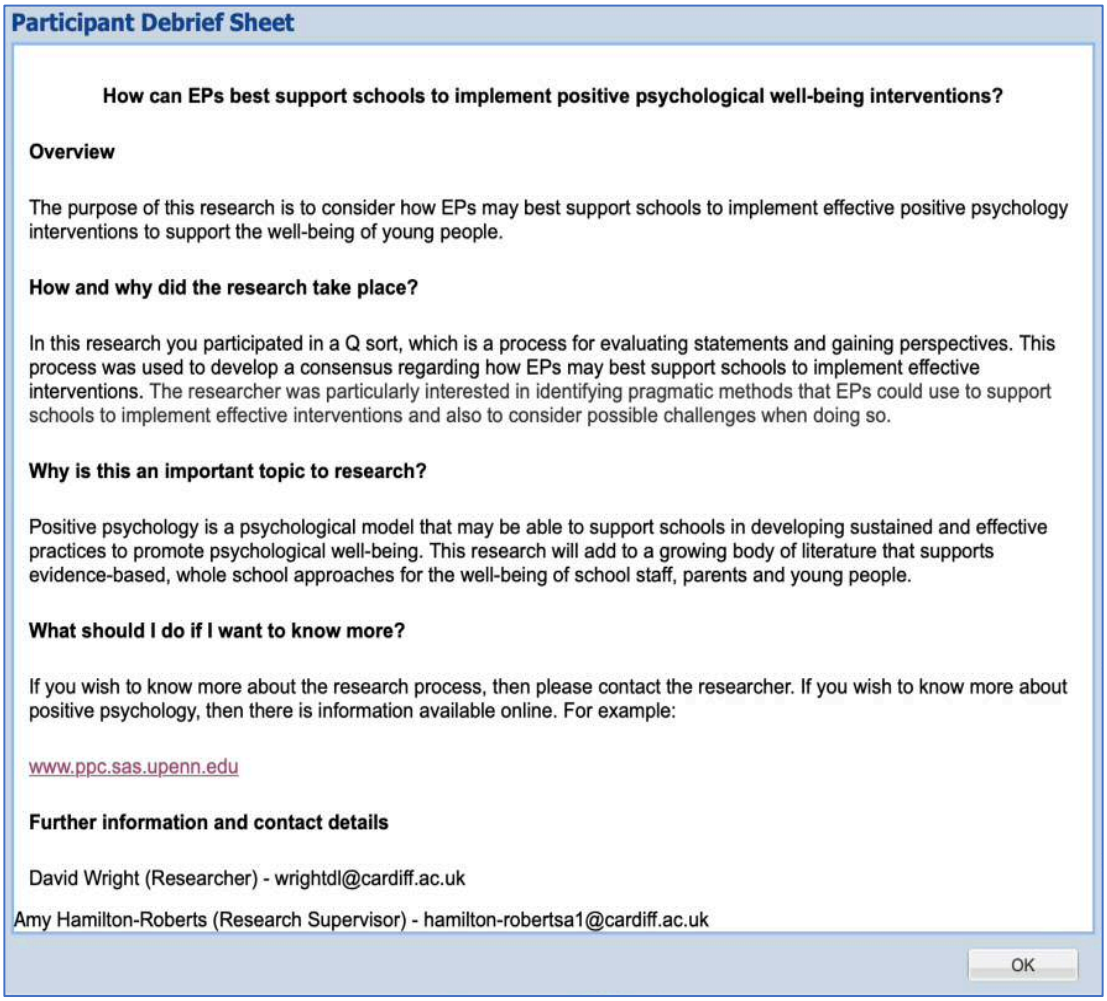
Further information and contact details

If you have any further questions about the study, please contact:
Researcher - David Wright (WrightDL@cardiff.ac.uk)
Research Supervisor - Dr. Amy Hamilton Roberts (Hamilton-RobertsA1@cardiff.ac.uk)

If you have concerns about your rights as a participant in this research, please contact:
Dr. Amy Hamilton-Roberts: 02920875493, Hamilton-RobertsA1@cardiff.ac.uk
Or
Cardiff University Ethics Committee: Psychethics@cardiff.ac.uk

Thank you for participating in the research and taking the time to read this information.

Appendix O – Online Q Study Participant Debrief Information



Participant Debrief Sheet

How can EPs best support schools to implement positive psychological well-being interventions?

Overview

The purpose of this research is to consider how EPs may best support schools to implement effective positive psychology interventions to support the well-being of young people.

How and why did the research take place?

In this research you participated in a Q sort, which is a process for evaluating statements and gaining perspectives. This process was used to develop a consensus regarding how EPs may best support schools to implement effective interventions. The researcher was particularly interested in identifying pragmatic methods that EPs could use to support schools to implement effective interventions and also to consider possible challenges when doing so.

Why is this an important topic to research?

Positive psychology is a psychological model that may be able to support schools in developing sustained and effective practices to promote psychological well-being. This research will add to a growing body of literature that supports evidence-based, whole school approaches for the well-being of school staff, parents and young people.

What should I do if I want to know more?

If you wish to know more about the research process, then please contact the researcher. If you wish to know more about positive psychology, then there is information available online. For example:

www.ppc.sas.upenn.edu

Further information and contact details

David Wright (Researcher) - wrightdl@cardiff.ac.uk

Amy Hamilton-Roberts (Research Supervisor) - hamilton-robertsa1@cardiff.ac.uk

OK

Appendix P – Correlation Between Sorts

Sorts	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1 A1	100	34	5	-1	1	21	-5	18	10	4	5	-37	-33	-10	12	26	-4	24	41	0	14	14	-2	22
2 B1	34	100	29	9	34	27	55	10	32	53	43	10	4	33	41	45	17	54	30	14	29	35	46	-29
3 C1	5	29	100	27	28	-15	36	-3	17	29	39	0	-5	22	-11	25	17	7	-5	29	14	43	14	-28
4 D1	-1	9	27	100	2	-13	7	22	24	24	-1	2	11	-4	19	6	11	25	-8	48	12	31	15	2
5 E1	1	34	28	2	100	4	41	25	41	38	19	34	22	19	5	4	25	2	29	12	18	28	34	36
6 F1	21	27	-15	-13	4	100	6	18	17	9	5	-2	-5	20	4	24	1	22	43	21	16	14	19	5
7 G1	-5	55	36	7	41	6	100	-17	31	29	30	34	30	44	17	35	18	24	3	15	20	47	45	-1
8 H1	18	10	-3	22	25	18	-17	100	6	13	-34	8	5	-1	1	1	0	9	32	18	31	19	-5	21
9 I1	10	32	17	24	41	17	31	6	100	29	22	26	33	25	16	14	15	22	40	26	5	38	32	16
10 J1	4	53	29	24	38	9	29	13	29	100	44	4	-9	15	51	39	3	39	26	9	26	27	23	-14
11 K1	5	43	39	-1	19	5	30	-34	22	44	100	18	19	27	32	37	15	31	4	10	18	38	18	-49
12 L1	-37	10	0	2	34	-2	34	8	26	4	18	100	73	45	7	7	18	8	5	12	2	24	44	29
13 M1	-33	4	-5	11	22	-5	30	5	33	-9	19	73	100	45	6	8	25	16	5	19	9	21	42	24
14 N1	-10	33	22	-4	19	20	44	-1	25	15	27	45	45	100	4	51	-13	45	10	2	24	9	45	-7
15 O1	12	41	-11	19	5	4	17	1	16	51	32	7	6	4	100	39	16	46	46	-2	13	27	9	-11
16 P1	26	45	25	6	4	24	35	1	14	39	37	7	8	51	39	100	11	59	38	-8	16	21	24	-27

17 Q1	-4	17	17	11	25	1	18	0	15	3	15	18	25	-13	16	11	100	8	4	12	19	45	29	14
18 R1	24	54	7	25	2	22	24	9	22	39	31	8	16	45	46	59	8	100	18	4	8	29	31	-29
19 S1	41	30	-5	-8	29	43	3	32	40	26	4	5	5	10	46	38	4	18	100	-8	15	18	7	13
20 T1	0	14	29	48	12	21	15	18	26	9	10	12	19	2	-2	-8	12	4	-8	100	36	37	26	7
21 U1	14	29	14	12	18	16	20	31	5	26	18	2	9	24	13	16	19	8	15	36	100	26	13	-12
22 V1	14	35	43	31	28	14	47	19	38	27	38	24	21	9	27	21	45	29	18	37	26	100	22	-8
23 W1	-2	46	14	15	34	19	45	-5	32	23	18	44	42	45	9	24	29	31	7	26	13	22	100	5
24 X1	-22	-29	-28	2	36	5	-1	21	16	-14	-49	29	24	-7	-11	-27	14	-29	13	7	-12	-8	5	100

Appendix Q – Factor Array Narratives

Factor 1: Working Strategically with Key Stakeholders

Factor 1 has an eigenvalue of 5.59 and explains 17% of the variance. Eight EPs loaded positively onto this factor. One EP (X1) loaded negatively onto this factor, indicating an opposing perspective. Two EPs (G1 and N1) expressed this perspective as well as Factor 2. One EP (R1) expressed this perspective along with Factor 4. One EP (X1) loaded onto this factor along with Factor 2 and Factor 3.

EPs who loaded onto this factor expressed the view that the most practical and effective approach for supporting schools to implement positive psychology well-being interventions was through working strategically with individuals and teams within schools (particularly senior management) and the local authority. For example, EPs can:

- (S2) Deliver training to a school's senior leaders about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). +3
- (S35) Explore the strategic and conceptual understanding of well-being with senior leaders. +1
- (S38) Explore with school senior leaders existing practices that promote well-being. +2
- (S34) Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH). +4

In addition, EPs can:

- (S11) Work collaboratively with relevant individuals and teams within the Local Authority. +4
- (S10) Work collaboratively with a task group from the school to develop well-being approaches. +3
- (S27) Support schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness). +3

EPs who loaded onto this factor expressed the view that the least practical and effective approaches for supporting schools to implement positive psychology well-being interventions was through directly working in schools (e.g. delivering interventions and supporting the implementation of interventions in schools). For example, EPs may find it less practical and effective to:

- (S8) Deliver individual well-being interventions (e.g. sessions with a student/staff member). -3
- (S7) Deliver group well-being interventions (e.g. a series of sessions with an identified group of students and/or school staff). -3
- (S6) Deliver whole school well-being interventions (e.g. sessions through school assemblies/within lessons). -4
- (S33) Directly support schools to implement well-being practices (e.g. supporting teachers in the classroom). -4

In addition, EPs may find it less useful to:

- (S4) Provide training to all school staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). -3
- (S37) Identify the well-being needs of children and young people in schools. -1

Factor 2: Working Systemically with Key Stakeholders

Factor 2 has an eigenvalue of 2.87 and explains 14% of the variance. Seven EPs loaded positively onto this factor. One EP (A1) loaded negatively onto this factor, indicating an opposing perspective. Two EPs (G1 and N1) expressed this perspective as well as Factor 1. One EP (A1) expressed this perspective along with Factor 3. One EP (X1) loaded onto this factor along with Factor 1 and Factor 3.

EPs who loaded onto this factor expressed the view that the most practical and effective approach for supporting schools to implement positive psychology well-being interventions was through working systemically at multiple levels (e.g. working with children and young people, working with families, working with school staff). For example, EPs can:

- (S1) Deliver staff training about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). +4
- (S19) Support schools to involve families and communities within well-being approaches (e.g. by consulting with parents and carers). +4
- (S7) Deliver group well-being interventions (e.g. a series of sessions with an identified group of students and/or school staff). +3
- (S37) Identify the well-being needs of children and young people in schools. +3

In addition, EPs who loaded onto this factor expressed the opinion that it was important to ensure that everyone involved should 'buy in' to an approach. For example, EPs can:

- (S17) Ensure school staff 'buy-in' to well-being interventions and programmes (e.g. by providing training about the links between well-being and academic performance). +2
- (S18) Ensure that families 'buy in' to well-being approaches (e.g. by providing training regarding the links between well-being and health outcomes). +3
- (S12) EP Services can have a designated well-being lead who oversees supporting all schools. +2

Furthermore, EPs who loaded onto this factor expressed the opinion that it was important to consider implementation quality. For example, EPs can:

- (S16) Support schools to ensure well-being interventions are implemented which include: (i) Sequenced activities (ii) Active forms of learning (iii) Focused on developing skills (iv) Explicit about targeting specific skills. +1
- (S20) Ensure that schools are able to identify evidence-based well-being interventions (e.g. positive psychology, CBT). +1
- (S22) Ensure schools persist when implementing interventions (e.g. through regular update meetings). +2

EPs who loaded onto this factor expressed the view that the least practical and effective approach for supporting schools to implement positive psychology well-being interventions was through a focus upon supporting implementation. For example, EPs may find it less effective to:

- (S4) Provide training to all school-staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). -4
- (S25) Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress). -4
- (S15) Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data). -3

In addition, EPs may find it less useful to:

- (S36) Explore the well-being needs of the local community. -3
- (S23) Disseminate information about well-being approaches (e.g. through consultation, websites, information leaflets, informal discussions). -2
- (S31) Guide schools in adopting well informed whole school well-being approaches that function at both targeted and universal levels. -1

- (S34) Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH). -2
- (S40) Explore with senior leaders the willingness to adopt whole school change regarding well-being. -1
- (S6) Deliver whole school well-being interventions (e.g. sessions through school assemblies / within lessons). -3

Factor 3: Supporting a Whole School Approach

Factor 3 has an eigenvalue of 2.23 and explains 10% of the variance. Five EPs loaded positively onto this factor. One EP (A1) expressed this perspective as well as Factor 2. One EP (X1) loaded onto this factor along with Factor 1 and Factor 2.

EPs who loaded onto this factor expressed the view that the most practical and effective approach for supporting schools to implement positive psychology well-being interventions was through supporting an integrative whole school approach. For example, EPs can:

- (S27) Support schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness). +4
- (S31) Guide schools in adopting well informed whole school well-being approaches that function at both targeted and universal levels. +3
- (S34) Support senior leadership teams in developing whole school well-being approaches (e.g. through SWOT analysis, appreciative inquiry, PATH). +3
- (S40) Explore with senior leaders the willingness to adopt whole school change regarding well-being. +3
- (S30) Support schools to integrate well-being approaches into the academic curriculum. 0

In addition, EPs who loaded onto this factor expressed the view that it was important that they adapt practice to fit the local context. For example, EPs can:

- (S32) Ensure the adoption of well-being approaches that schools are able to implement with fidelity and rigour (e.g. simple to implement). +2
- (S36) Explore the well-being needs of the local community. +2
- (S26) Ensure the adoption of well-being approaches that are sensitive to the local context. -1

- (S13) EP Services can ensure that all EPs are able to support schools with well-being. +4

EPs who loaded onto this factor expressed the view that the least practical and effective approach for supporting schools to implement positive psychology well-being interventions was through a focus on an evidence-based approach and supporting implementation quality. For example, EPs may find it less useful to:

- (S15) Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data). -4
- (S20) Ensure that schools are able to identify evidence-based well-being interventions (e.g. positive psychology, CBT). -4
- (S4) Provide training to all school staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). -3
- (S12) EP Services can have a designated well-being lead who oversees supporting all schools. -3
- (S25) Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress). -3
- (S5) Evaluate well-being interventions to ensure that recommendations provided to schools are evidence-based. -2
- (S9) Develop bespoke training for each school regarding well-being interventions. 0
- (S11) Work collaboratively with relevant individuals and teams within the Local Authority. -1
- (S21) Support schools to plan the implementation of an intervention (e.g. integration, methods of delivery, program intensity). -1
- (S24) Support schools to evaluate well-being interventions (e.g. assessing progress towards specific outcomes). -1

Factor 4: Providing Training and Supporting High-Quality Implementation

Factor 4 has an eigenvalue of 2.02 and explains 12% of the variance. Six EPs loaded positively onto this factor.

EPs who loaded onto this factor expressed the view that the most practical and effective approach for supporting schools to implement positive psychology well-being interventions was through providing training for school-staff. For example, EPs can:

- (S1) Deliver staff training about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). +4
- (S2) Deliver training to a school's senior leaders about implementing evidence-based well-being interventions (e.g. ACT, positive psychology, SEAL). +3
- (S9) Develop bespoke training for each school regarding well-being interventions.
- (S3) Provide training to all school staff regarding the theoretical basis of a well-being intervention (e.g. the PERMA model of positive psychology). +1
- (S4) Provide training to all school staff regarding implementation science (e.g. programme fidelity, monitoring, evaluating). 0
- (S10) Work collaboratively with a task group from the school to develop well-being approaches. +4

In addition, EPs who loaded onto this factor felt that it was important to consider how best to support high-quality implementation. For example, EPs can:

- (S21) Support schools to plan the implementation of an intervention (e.g. integration, methods of delivery, program intensity). +3
- (S5) Evaluate well-being interventions to ensure that recommendations provided to schools are evidence-based. +2
- (S14) Support schools to monitor the implementation quality of a well-being intervention (e.g. intensity, consistency, programme adherence). +1
- (S15) Support schools to accumulate practice-based evidence for well-being interventions (e.g. through gathering data). +1
- (S24) Support schools to evaluate well-being interventions (e.g. assessing progress towards specific outcomes). +2
- (S6) Deliver whole school well-being interventions (e.g. sessions through school assemblies / within lessons). 0

EPs who loaded onto this factor expressed the view that the least practical and effective approach for supporting schools to implement positive psychology well-being interventions was through school and community engagement and through designation of 'expert' roles. For example, EPs may find it less useful to:

- (S12) EP Services can have a designated well-being lead who oversees supporting all schools. -4
- (S25) Provide technical assistance to schools to address any occurring issues (e.g. sharing information and expertise, monitoring progress). -4
- (S17) Ensure school staff 'buy-in' to well-being interventions and programmes (e.g. by providing training about the links between well-being and academic performance). -3
- (S18) Ensure that families 'buy in' to well-being approaches (e.g. by providing training regarding the links between well-being and health outcomes). -3
- (S36) Explore the well-being needs of the local community. -3
- (S13) EP Services can ensure that all EPs are able to support schools with well-being. -1
- (S22) Ensure schools persist when implementing interventions (e.g. through regular update meetings). -2
- (S27) Support schools to integrate well-being into their core culture and ethos (e.g. developing aims and values, raising awareness). -1
- (S28) Support schools to develop the role of 'well-being leads'. -1
- (S32) Ensure the adoption of well-being approaches that schools are able to implement with fidelity and rigour (e.g. simple to implement). -2
- (S35) Explore the strategic and conceptual understanding of well-being with senior leaders. -2