

AN EXPLORATORY STUDY OF A MINDFULNESS-BASED, TARGETED  
INTERVENTION WITH 12 AND 13-YEAR-OLD STUDENTS

by

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A thesis submitted to the University of Birmingham for the degree of Applied Educational  
and Child Psychology Doctorate

Volume 1

School of Education  
University of Birmingham  
June 2015

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## ABSTRACT

The evidence base for the benefits of mindfulness for children is growing and the beneficial outcomes of Mindfulness-Based Interventions (MBIs) are found in a broad range of domains. The aim of this research study was to explore and evaluate the outcomes and process of an MBI delivered in a school setting to students aged 12 and 13-years-old by a Trainee Educational Psychologist.

A mixed methods approach was employed within a paradigm of pragmatism which was well suited to the complexity of phenomenon to be studied. In order to answer the research questions an intervention design was utilised in which outcomes for two groups of students were compared. Multiple of sources of data were analysed; qualitative data derived from semi-structured interviews was thematically analysed and interpreted alongside findings from a quantitative analysis of data obtained from the Child and Adolescent Mindfulness Measure and the Strength and Difficulties Questionnaire. Evidence was found for an increase in mindfulness; most students reported experiencing improved self-awareness, awareness of their environment and feelings of calm and relaxation associated with mindfulness practice. A significant difference was found between pre- and post-intervention parental total difficulties scores on the SDQ, suggesting that student's difficulties had improved from the parent's perspectives.

## DEDICATION

To my friends and family who made this all possible.

## ACKNOWLEDGEMENTS

With thanks to my tutor, Jane Leadbetter for her support and guidance. I would like to thank Stevan Radoja, my professional practice supervisor and colleague throughout Years Two and Three of my training, for his encouragement, support and expertise. Finally, I would like to thank all of my colleagues in the Local Authority in which I worked, for their kindness and encouragement.

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## CHAPTER ONE

### INTRODUCTION

Mindfulness is a concept which originated in Buddhism and has been practiced for over 2,500 years (Shapiro et al, 2009). It was secularised by practitioners such as Jon Kabat-Zinn, to distance its practice from the religion of Buddhism whilst still maintaining the basic practices and philosophy underpinning Mindfulness. Kabat-Zinn defined mindfulness as ‘paying attention in a particular way; on purpose, in the present moment, and non-judgementally’ (1994, p.4). Secular mindfulness programmes, such as the Mindfulness-Based Stress Reduction (MBSR) programme developed by Kabat-Zinn (2013) and the Mindfulness-Based Cognitive Therapy (MBCT) programme, developed by Teasdale et al (2000) have been used to address difficulties such as stress and depression with success. The increasing popularity of mindfulness within different fields of research and practice is reflected in its growing evidence base, particularly for its application to mental health; the National Institute for Health and Care Excellence (NICE, 2009) now recommends a MBCT for the treatment of recurrent depression in adults.

#### 1.1 The application of mindfulness

A review of the literature indicated that mindfulness is beneficial to children and that these benefits are broad, although, as Davis (2012) highlighted, the majority of research has been carried out with adults. Mindfulness projects have been successfully implemented within a school context with children and young people (CYP); for example, the ‘.b’ mindfulness training programme, devised by Burnett et al (2011) as part of the Mindfulness in Schools

Project has a growing evidence base for its benefits. The project aimed to encourage, support and research the teaching of secular mindfulness in schools in the UK. It has been evaluated by researchers such as Hannelley (2011). Hannelley (2011) found evidence that the programme was linked to increased resilience and well-being and concluded that it led to observable changes in behaviour and improved academic performance.

The literature review that follows this chapter, aimed to explore the evidence for the benefits of mindfulness programmes for CYP of differing ages delivered in different contexts and to examine the evidence for explanations for how mindfulness worked. The strengths and limitations within this field and possible gaps in the research were used to develop research questions to guide a study which would be useful and relevant to practitioners applying mindfulness within a school context with CYP.

Davis (2012) indicated that the application of mindfulness was being used in a wide range of fields, such as parenting, anxiety and chronic pain. Research in other fields, such as child clinical psychology appear to have an evidence base which is more developed when compared to the evidence base for the application of mindfulness with nonclinical populations. The literature appeared to be most heavily focused on outcomes, despite an underdeveloped theory on the mechanisms by which mindfulness programmes bring about change for children.

Weare (2000) commented that some studies have claimed to have evaluated mindfulness programmes but on closer examination have evaluated programmes which have also utilised other methods, such as relaxation techniques. Zenner (2014) reported that the role of potential mediatory and contextual factors was not always considered by researchers in this field.

The research on potential mechanisms to explain how mindfulness worked was also explored. It was difficult to organise neuro-scientific evidence into a cohesive whole, as different

studies chose to focus on different parts of the brain, or neural processes which tended to result in differing theories on possible neurobiological mechanisms of change. It is argued that at present there appears to be greater coherence in cognitive explanations of how mindfulness works and this perspective offers a more complete, and developed theory of change.

The potential influence of factors related to the process of an MBI on outcomes, such as parental and school involvement in a programme, appeared to be overlooked. Furthermore, quantitative measures of outcome were most prevalent in this research field and so the qualitative experiences of participants had often been analysed unsystematically and reported anecdotally, or not reported at all.

## 1.2 Aims

The gaps in the literature, strengths and limitations of the current evidence base and recommendations made by researchers within this field helped guide this studies research aim and questions. In order to examine the process and outcomes of a Mindfulness-Based Intervention in greater depth the researcher chose to design an exploratory study which utilised both qualitative and quantitative sources of evidence in order to evaluate an MBI. The MBI evaluated in this study was delivered by the researcher who was a Trainee Educational Psychologist and the MBI was delivered to students aged 12 and 13 years in a school setting. The students who participated were not part of the clinical population and were not receiving specialist support from outside agencies, however, they were highlighted by the school's Special Educational Needs Co-ordinator as experiencing varying degrees of difficulty within the home and school settings. The study was designed to reflect the processes involved in a real-life application of mindfulness, with students attending a mainstream school, who were

experiencing the types of difficulties that the evidence base had identified mindfulness could help support. The researcher utilised books and articles designed to support parents and practitioners, in applying mindfulness with children to develop a Mindfulness-Based Intervention.

The researcher aimed to explore the complexity of the phenomenon of MBI's in school settings in greater depth, to contribute to the theory of how MBI's work and what outcomes to expect in this context. Mixed methods were utilised in order to enhance the credibility and trustworthiness of findings. The student's views and experiences of the MBI were captured to illuminate aspects of the process they found helpful or challenging, to help to verify outcome data from other sources of evidence and to ensure the CYP's voice was not marginalised in this research process.

In light of these aims the project addressed the following research questions:

1. In what ways might Mindfulness-Based Interventions (MBI's) be beneficial (or not) to 12 and 13-year-old students?
2. What processes influenced the outcomes of this MBI?
3. What themes emerged to illustrate how the hoped for outcomes were (or were not) experienced by the students?

## CHAPTER 2

### 2. LITERATURE REVIEW

In this chapter the literature on mindfulness will be considered. There have been a number of reviews of the literature in recent years by researchers in the field of mindfulness and the findings from these extensive reviews will be examined. The degree to which there is a general consensus on the theories, processes and outcomes of mindfulness for children and young people (CYP) will be considered. The strengths and limitations of research in this field, and gaps in the evidence base, will be explored in order to inform the design of this study to ensure its originality and contribution to this evidence base. Findings from studies highlighted the potential, wide-ranging benefits of mindfulness for CYP. It is argued that the evidence base could be further developed by applied psychologists, such as educational psychologists, as recommended by Davis (2012).

#### 2.1 Introduction to Mindfulness

Davis (2012) and Greco and Hayes (2008) concluded that a consensus on an operational definition of mindfulness had not yet been reached. Many researchers, such as Burke (2010), Weare (2000), Semple (2010) and others made reference to Kabat-Zinn's definition. Kabat-Zinn's definition was adopted in this study.

Jon Kabat-Zinn defined mindfulness operationally as 'the awareness that arises by paying attention in a particular way; on purpose, in the present moment, and non-judgementally' (2013, p.xxxv), describing non-judgement as 'accepting without thinking that the experience of the present moment is good or bad, right or wrong, important or not' (2003, p.145). Kabat-

Zinn's operational definition of mindfulness encompasses both a desired end-point to practising mindfulness, i.e. increased awareness brought to moment by moment experience, in addition to a reference to the process of practising mindfulness, i.e. paying attention in a particular way to the present moment. Kabat-Zinn (2013) described mindfulness as a way of being, rather than just an approach and that awareness, its synonym, gave us more options for how we might choose to relate to whatever arose in our minds. Kabat-Zinn's definition reflects the conceptualisation of mindfulness offered by Hanh (1991) as both a means and an end; mindfulness is practised to build awareness (a means), whilst also enabling us to live fully moment by moment (an end). Hanh (1991) is a Buddhist monk, who is considered a Zen master in the teaching of mindfulness. The similarities in secular and Buddhist conceptualisations of mindfulness highlight that although mindfulness has been secularised, it cannot divorce itself completely from its origins from which its meaning was derived. Davis (2012) referred to the challenge of separating mindfulness fully from its origin without changing or distorting it from its original meaning. Davis (2012) argued, however, that it was important to attempt to develop an operational definition of mindfulness, which reflected a conceptual understanding of the phenomena for the purposes of developing research in this field.

An analysis of definitions of mindfulness highlighted the similarities and differences in the way different researchers conceptualised mindfulness. Researchers made references to the desired end-point and/or process of mindfulness. As discussed, Kabat-Zinn's (2013) and Hanh's (1991) definitions suggest that mindfulness encompassed both conceptualisations.

Davis (2012) described how mindfulness had been conceptualised by researchers as a method, perspective, subjective experience and cognitive process suggesting that the perimeters around its construct specificity had not yet been formalised by researchers in this field.

Bishop et al (2004) defined mindfulness as a process of regulating attention in order to be more aware of one's present experience and relate to it with curiosity, experiential openness and acceptance. Bishop et al (2004) described mindfulness as a method of mental training or practice in which the mental activity of re-directing attention towards present experience is repeated in order to cultivate mindfulness. This conceptualisation of mindfulness practice mirrors Kabat-Zinn's analogy of mindfulness to a muscle; the muscle of mindfulness grows stronger, more supple and flexible, the more it is used.

Hooker and Foder (2008) offered a comprehensive explanation of mindfulness in which it is conceptualised as a cognitive process. They state that it involves attending to the external environment, such as sights, sounds and smells, as well as to one's internal environment, such as bodily sensations, thoughts and feelings. Hooker and Foder (2008) suggested that the practice of observing internal and external experiences enabled us to accept all experience to a greater degree and therefore better attend to the present moment.

Burke (2010) described mindfulness as a method of formal practices, such as the body scan, sitting, movement and walking meditations, and informal practices where one intentionally brings mindful awareness to activities of daily living under the guidance of a teacher. Burke (2010) commented that participants acquired mindfulness skills and attitudes, such as focusing, sustaining and switching attention and accepting present moment experience without judgement or elaboration through practice. Burke (2010) described how the physical sensations of the breath and the body acted as anchors for attention, in order to focus attention on present experience rather than thoughts concerning past or future events.

Burke (2010) explained that mindfulness practice encouraged a decentred perspective of one's experience, in which, thoughts, sensations and emotions were viewed as transient phenomena

so that one could more easily disengage from habitual patterns or mind states. This conceptualisation of the desired end-point of mindfulness reflects Kabat-Zinn's conceptualisation of awareness, which Kabat-Zinn argued could be cultivated through practice; an awareness that was bigger than our thoughts, therefore allowing us to be flexible in how we relate to thoughts.

Bishop et al's (2004) and Burke's (2010) references to attention, such as mindfulness as an aid to regulating attention (Bishop et al, 2004), and focusing, sustaining and switching attention (Burke, 2010) indicated that they conceptualised mindfulness as a cognitive process, and not simply a 'way of being' (Kabat-Zinn, 2003, p.148). These references reflected attempts in this field to explain the cognitive processes underlying mindfulness, linked to our attentional systems and meta-cognition. The attentional processes of the practice of mindfulness could be considered as the means to an end, rather than being the end-point in itself. Interestingly, a review of the literature suggested that the term 'attention' featured more often in explanations of mindfulness offered by researchers, and references to 'awareness' were less common. The varying emphasis placed on terms used to define mindfulness is of significance as it impacts on how mindfulness and its effects are measured.

As Davis (2010) highlighted, mindfulness is a subjective experience which is not related to specific feelings in awareness, such as feelings of sadness and anxiety. The complexity of this subjective experience poses a challenge for researchers who wish to measure increased mindfulness and changes to attention and meta-cognitive processes in a way that is scientifically rigorous.

*Table 1: a representation of how variables are measured in a sample of studies included in the literature review:*

Study	Multiple measures	Single measure	Outcome measure(s)	Measure of mindfulness	Measure of mechanism of change	Type of measurement utilised
Napoli et al (2005)	✓	✗	✓	✗	✗	Self-report checklists, teacher rating scale for attention, mental tasks administered to participants to test attention
Flook et al (2010)	✗	✓	✓	✗	✗	Teacher and parent checklists to measure executive functioning
Oberle et al (2012)	✓	✗	✓	✓	✗	Self-report checklist to measure mindfulness, test for salivary cortisol, computerised mental task to test inhibition control
Semple et al (2010)	✓	✗	✓	✗	✗	Parent checklist for behaviour, 2 self-report checklists for anxiety
Broderick and Metz (2009)	✓	✗	✓	✗	✗	Multiple self-report checklists to measure emotional regulation, affect and rumination, parent checklist for behaviour
Metz et al (2009)	✓	✗	✓	✗	✗	Multiple self-report checklists measuring perceived stress, psychosomatic complaints, and emotional regulation

Monchat et al (2013)	✗	✗	✓	✓	✗	Focus groups, open-ended interviews
Tang et al (2012)	✓	✗	✓	✗	✗	Mental task to measure attention, self-report checklist for mood states
Holzel et al (2010)	✓	✗	✓	✗	✗	Self-report checklist for perceived stress, fMRI used to measure changes to amygdala
Pagnoni et al (2008)	✗	✓	✗	✗	✓	fMRI used to measure duration of default mode network neural activation during a mental task
Ives-Deliperi et al (2011)	✗	✗	✗	✗	✓	fMRI used to compare neural activations in different areas of the brain.

Table 1 illustrates how researchers largely rely on outcome measures to measure the effects of mindfulness, which are used to infer that a MBI has increased mindfulness and therefore has lead to the MBI's positive outcomes. Baer et al (2009) argued that it was important to discriminate the outcomes of practicing mindfulness from the constructs of mindfulness. In the literature, this distinction was not always made explicit and researchers did not always describe how they had operationalised mindfulness in order to measure it or its outcomes. The validity and reliability of conclusions drawn by studies that have relied solely on outcome measures is questionable as the relationship between the outcome measure and participants' mindfulness cannot be verified.

The majority of measures of mindfulness are quantitative, consisting of items on a self-report scale. This suggests that the complexity of mindfulness, experienced subjectively, can be quantified by reducing into its constituent parts. As there is no consensus on the operational definition of mindfulness, it is difficult to measure the reliability of such measures, although Baer et al's (2006) examination of five recently constructed mindfulness questionnaires suggested they appeared psychometrically promising with good internal consistency and were able to predict psychological symptoms. Baer et al's (2006) findings also supported the conceptualisation of mindfulness as a multifaceted phenomenon, with the facets 'describe, act with awareness, non-judge and non-react' (p.42) being related in expected ways to other variables. Interestingly, many studies reviewed in the literature tended to measure outcome measures, such as attention, rather than facets of mindfulness, perhaps because the operationalisation of attention and ways to measure it have been developed and validated to a greater degree when compared to facets of mindfulness such as awareness and acceptance.

Baer et al (2006) suggested that performance on mental tasks might help to measure mindfulness facets such as acceptance, which were harder to measure using self-reports; for example, tasks used to measure increased tolerance of stressful stimuli following mindfulness practice. Baer et al (2006) highlighted the difficulties in operationalising facets of mindfulness such as acceptance, suggesting that additional work was needed to clarify its definition and relationship to mindfulness.

The measurement of mindfulness using self-report checklists is further complicated when measuring the mindfulness of children. Greco and Hayes (2008) questioned the accuracy of child reports on internal experiences and suggested difficulties with reading and comprehension might act as barriers to accessing self-report measures for some children. Greco and Hayes (2008) suggested that these assessment issues might lead researchers to

employ different levels of analysis, beyond self-reports, such as measuring mindfulness within the context of parent-child and teacher-student relationships. Greco and Hayes (2008) also suggested that in time better behavioural measures of mindfulness could be developed, as well as reliable ways of measuring neurobiological mechanisms of change.

## 2.2 Findings from research reviews

### 2.2.1. Benefits of mindfulness for children

A systematic search using the databases ERIC-ProQuest, COPAC, the Applied Social Sciences Index and Abstracts (ASSIA) and Swetswise for articles using the terms ‘mindfulness’ and ‘schools’ produced 75 peer reviewed articles. A search for articles using the terms ‘mindfulness’ and ‘learning’ produced a further 227 articles.

The literature search identified a number of reviews of the current evidence base for the use of mindfulness with children from which a number of common themes emerged on the process, outcomes, strengths and limitations of research in this area. Weare (2000) carried out a systematic review, including only peer reviewed articles in which a ‘significant’ (p.143) number of children participated in the research. Criteria for deciding if a sample size was significantly big enough was not explicitly stated which could lead to ambiguity. Weare (2000) concluded that improved mindfulness appeared to benefit children in a number of ways, such as improving mental health and wellbeing, mood, self-esteem, self-regulation, positive behaviour and academic learning.

Weare (2000) tended to focus on the benefits of mindfulness and positive aspects of the research studies but also mentioned some of the methodological limitations in this field, such as small sample sizes, a lack of Randomised Controlled Trials (RCT’s) and an overreliance on subjective measures, such as self-reports. In addition, Weare (2000) acknowledged that some

researchers claimed to evaluate mindfulness interventions, when on closer analysis, interventions included aspects of other approaches which were not considered as mindfulness, such as relaxation techniques. This made reliable comparisons between studies problematic and threatened the validity of inferences made regarding the outcomes of mindfulness interventions.

Burke (2010) offered more of a critical review of the literature, providing an in-depth examination of the data which took into consideration the diversity of samples, varied implementation and practices, and the wide range of instruments used. Burke (2010) commented that there was a very small pool of publications to date in the newly emerging field of mindfulness with children, and so chose to include non-peer reviewed journals in the review. Burke (2010) suggested that there was evidence to support the feasibility of MBIs but that there was less empirical evidence for the efficacy of interventions. Burke (2010) concluded that studies reviewed reported wide ranging benefits such as decreased anxiety and emotional reactivity and enhanced attention, executive functioning, meta-cognition and social skills.

Burke (2010) argued that there were a number of methodological issues with the research in this field, such as the lack of objective outcome measures and large scale RCT's, and a wide variability in methodologies used and data reported. Burke (2010) suggested formats for interventions should be shared to a greater degree in order to replicate studies and test the degree to which outcomes were transferable and credible, and to allow for valid comparisons to be made. Burke's (2010) commentary suggested that positivist quantitative research and empirical evidence was valued over qualitative, locally based evidence. The participants'

experiences of the intervention and views on how it helped were not considered, nor was the practitioners experience of implementing the programme.

In contrast, the review of literature offered by Greenberg and Harris (2012) argued that both quantitative and qualitative evidence had the potential to enhance our knowledge and understanding of mindfulness interventions. Greenberg and Harris (2012) concluded that mindfulness could be effective in building resilience in the universal population of children but was realistic about the further research needed before we can fully understand this phenomenon. Greenberg and Harris (2012) suggested the use of broader measures of outcomes, multiple measures of change, examining dosage and intensity factors and the inclusion of short term mediators, such as emotional regulation and attention, might advance our understanding of the mechanisms by which mindfulness brought about positive change. Greenberg and Harris (2012) commented that systematic qualitative research could play a role in illuminating processes of change, and therefore help to develop the evidence base. Greenberg and Harris (2012) chose to include other contemplative practices in the review, such as studies which employed Transcendental Meditation (TM) and yoga practices, therefore, the reliability of the comparisons made and the extent to which Greenberg and Harris's (2012) conclusions related to mindfulness practices exclusively was questionable.

### 2.2.2. Reviews of mindfulness programmes delivered in the school setting

Remple (2012) offered a useful commentary on the benefits of mindfulness programmes delivered in schools. A review of the literature found improved mindfulness was linked to benefits such as reduced stress and emotional reactivity, improved self-confidence, enhanced relationships with others, and improved attention, optimism, self-esteem, and self-awareness. Remple (2012) referred to Ritchard and Perkins (2000) theory that Mindfulness enhanced

creativity and flexibility, so that CYP could reflect on multiple perspectives and alternative possibilities. Remple (2012) also highlighted the success of mindfulness interventions targeted to children experiencing anxiety and depression. The validity of the review was difficult to judge as the criteria for selecting studies for review was not reported and descriptions of them indicated mindfulness was not exclusively employed in the interventions evaluated. Remple (2012) argued that a universal school-based programme with an emphasis on prevention was most complementary to the philosophy of mindfulness, rather than viewing mindfulness as a treatment for a 'problem' located within the CYP. Remple (2012) echoed Greenberg and Harris's (2012) argument that there was a need for broader outcome measures rather than a focus on one aspect of psychological functioning in order to highlight the holistic benefits of mindfulness for participants. The argument is made for an integrated approach to mindfulness interventions for children where efforts are made to educate and inform teachers and parents about mindfulness practices.

Zenner (2014) carried out a comprehensive review of the literature in which inclusionary criteria were shared. Zenner (2014) reviewed interventions that used mindfulness exclusively increasing the validity of links made between mindfulness and outcomes, furthermore, all interventions included were carried out in school settings. Zenner (2014) concluded that there was evidence for an association between MBI's and an increased cognitive capacity to attend and learn, and that the benefits of the MBI increased with increased practice. Smaller effects on psychological measures of stress, coping and resilience were also found.

Zenner (2014) commented that analysis of outcomes was limited by the researchers failing to take into account the contextual effects and the feasibility of the intervention. In addition, Zenner (2014) stated that data analysis might be influenced by what Sterne et al (2000) referred to as 'small study effect' (p.), whereby effect sizes of mindfulness interventions are

overestimated. Zenner (2014) concluded, however, that initial results from MBI's were promising and recommended larger scale studies using robust and well-validated measures be conducted along with mixed methods to increase the reliability and validity of outcome findings. Zenner (2014) recommended that adequate information on the processes involved in MBI's be included in reports in order to reliably explore the aspects of the implementation process most important to the success of the intervention and what adaptations could be made without harming its integrity.

### 2.3. Outcomes associated with mindfulness

In the following section research evaluating the outcomes of mindfulness interventions for CYP will be analysed in more detail in order to explore the evidence for the benefits of mindfulness in greater depth.

#### 2.3.1. Attention

The research in the outcome domain of attention was explored to consider the evidence for the theory that the practice of mindfulness was associated with improved attentional skills in CYP.

Napoli et al (2005) conducted a mindfulness-based intervention with a large sample of 194 participants assigned either to an experimental or control group, aged between 6 and 9 years old. The primary goal of the study was to increase the pupils' capacity to pay attention but it was expected that pupils would benefit from the additional effects of mindfulness practice.

Napoli et al (2005) theorised that if one was fully present in the moment, focus and stress management improved. They believed developing mindfulness in pupils would improve their ability to approach learning situations from a novel perspective and improve pupils' attention to learning. Napoli et al (2005) suggested that improved mindfulness would lead to positive

changes in right brain activity that would be associated with enhanced creativity and flexibility of thought. They referred to research within the field as evidence for enhanced creativity and flexibility, but no such evidence for changes to right brain activity.

Napoli et al (2005) found that participants in the experimental group experienced a significantly greater increase in selective attention, decrease in test anxiety and decrease in teachers ratings associated with ADHD behaviours, and improved social skills ratings when compared to the control group. No significant difference was found for changes to sustained attention between the experimental and control groups. The trustworthiness of Napoli's (2005) findings were improved by the use of more than one method to measure attention and the findings were promising, demonstrating that benefits were experienced in multiple dimensions.

Napoli et al (2005) commented on the challenge of finding measures of attention for a non-clinical sample and suggested that their use of a behavioural measure intended for a population with an identification of Attention Deficit Hyperactivity Disorder (ADHD) might not have been appropriate. Napoli et al's (2005) research appeared to be positivist in its approach, utilising quantitative measures of attention and analysing the data statistically for the purpose of making statistical generalisations to the population from which the sample originated. Napoli et al (2005, p.111) recommended that a smaller sample size of ten participants for experimental and control groups might have obtained more '...interestingly explorable data', perhaps recognising the shortfalls of the research approach adopted. Despite these limitations, the intervention used only mindfulness-based practices, such as breath awareness practices, the body scan, movement and sensorimotor awareness activities. The intervention was also conducted in a school setting and therefore more relevant for school-based practitioners.

### 2.3.2. Executive functioning

Executive Functioning (EF) refers to the cognitive processes involved in planning and carrying out regulated, goal-directed activity, such as working memory, mental set-shifting and response inhibition (Flook et al, 2010). The findings of a number of studies which focused on EF indicated that mindfulness interventions were associated with improved EF.

Flook et al (2010) carried out one of the few studies with a specific focus on the effects of a mindfulness intervention on children's EF. They hypothesised that cognitive functioning was interconnected, and so improvements in one area might lead to benefits in other areas of functioning; a possible explanation for the broad ranging outcomes found by researchers in this field. The mindfulness intervention was comprised of practices and activities created by Susan Kaiser Greenland (2010), described by Flook et al (2010) as a leading mindfulness teacher in the United States.

Flook et al's (2010) report included a detailed description of the intervention (referred to as Mindfulness Awareness Practices (MAP)), making replication and comparison more achievable. Experimental and control groups were used increasing the scientific rigour of the investigation. 64 pupils aged 7 to 9 years participated in twice weekly 30 minute sessions for 8 weeks. The Behaviour Rating Inventory of Executive Functioning (BRIEF) was used to acquire teacher and parent ratings of behaviour associated with EF. They found improvements in behavioural regulation, meta-cognition, overall EF and in specific domains of EF, such as abilities to shift, initiate and monitor attention. Interestingly, analysis of the data suggested the stronger effects of MAP's were associated with those children with EF difficulties compared to children with executive functioning in the average range. Respondent bias may have influenced teacher ratings as they were aware of pupil membership to either the experimental

and control group, however, parents who were not aware of their son/daughters group membership reported similar changes.

Flook et al (2010) suggested further investigation was needed to identify potential sources of variance in outcomes and also suggested the use of teacher interviews to obtain richer information for capturing individual experience. Inclusion of the pupils' perspectives, however, was not mentioned. In conclusion, Flook et al (2010) stated that all children could participate in MAPs, although one should be mindful of individual variability in response to interventions. They also suggested MAPs could be targeted at the population of pupils identified with special educational needs, especially when considering the strongest effect sizes were found with children with EF difficulties.

Oberle et al (2012) employed multiple-level analysis to test the theory that mindfulness improved neuroendocrine functioning which was associated with better inhibitory control, management of stress and executive control skills. This study was in contrast to most research in this area, such as Flook et al's (2010) study, in which only one outcome domain was explored. The sample of pupils were in early adolescence, in contrast to other studies in this field which tended to focus on the effects of mindfulness on pre-adolescents. Oberle et al (2012) used an objective, empirical measure; the biological indicator, salivary cortisol as a test of neuroendocrine regulation, in addition to more subjective measures such as the self-report checklist to measure mindfulness and less empirical measures, such as the inhibitory control task to measure EF.

The study focused on exploring the link between mindfulness and inhibition control and employed a correlational design so a causal relationship between these two variables could not be verified. Oberle et al (2012) set out to carry out multiple levels of analysis, however,

sources of evidence were limited to three measures of outcome in three domains, so limiting the extent to which trustworthiness in the data could be improved by triangulative methods. This threatened the credibility of Oberle et al's (2012) findings. Oberle et al (2012) controlled for the variables of gender, grade and cortisol levels, but there were likely to have been multiple contextual variables outside of the researchers control. Although one could argue this lack of control enhanced the studies ecological validity it would have threatened the studies internal validity. The inclusion of qualitative data from pupils, teachers and parents could have been triangulated with quantitative outcomes, to enhance the credibility of Orberle et al's (2012) generalisations from the findings and helped to confirm Oberle's (2012) theory for the relationship between inhibitory control and mindfulness.

### 2.3.3. Social and emotional wellbeing

Jon Kabat-Zin, one of the key practitioners within the field of mindfulness and mental health, developed the Mindfulness-Based Stress Reduction (MBSR) programme and Williams and Penman (2011) also reported that Kabat-Zin inspired the development of the Mindfulness-Based Cognitive Therapy (MBCT). Jon Kabat-Zin recorded decades of anecdotal evidence relating to the efficacy of mindfulness-based strategies in treating adults with mental health difficulties. This was supported by scientifically rigorous studies conducted by Teasdale et al (2000) and Ma and Teasdale (2004). Both studies found evidence that MBCT reduced the likelihood of relapse in patients with recurrent depression, which lead to NICE's (2009) inclusion of MBCT in treatment recommendations for clients with this condition in 2009. The evidence for the effectiveness of mindfulness in enhancing social and emotional wellbeing and addressing mental health difficulties in the adult field is more well-established than the evidence-base for its effectiveness with CYP, as reported by Davis (2012).

Evidence for the effectiveness of Mindfulness-Based Interventions for clinical and non-clinical groups of children and YP is growing and outcomes appear promising, however, research and practice in the clinical field is better established. Mindfulness programmes for non-clinical groups can be conducted in educational settings are either targeted to particular groups of children experiencing difficulty or universal interventions in which the aim is to enhance social and emotional wellbeing and improve resilience to social and emotional difficulties.

Semple (2010) and Broderick and Metz (2009) found evidence for improvements to social and emotional resilience following mindfulness interventions. Semple (2010) argued that anxiety was linked to attention problems and educational outcomes, stating that anxiety impaired attention and information processing, therefore, leading to poorer outcomes. Semple (2010) conducted a study in which participants were students aged 9-13 years who had been referred to an educational psychologist for reading difficulties and associated stress and anxiety, describing them as a group of inner-city children struggling with academic problems. Semple (2010) theorised that the students' management of attention and emotional regulation could be improved by practices that helped to decentre them from thoughts and emotions, leading to an increase in social and emotional resiliency and educational success.

A Mindfulness-Based Cognitive Therapy approach adapted for Children (MBCT-C) was utilised by Semple (2010) and at the end of the 12 week programme findings from self-reports indicated a decrease in anxiety, attention problems and behaviour problems. The intervention was conducted in a clinic, reducing the transferability of findings to educational settings and the sample size was relatively small, limiting the degree to which findings could be statistically generalised. The success of the study may be partly due to its systems level approach as parents were partially integrated into the programme; parents were invited to an

introductory session in which they experienced mindfulness practices, and a review session at the conclusion of the intervention. It is unclear how involved parents were beyond attendance at these sessions, but it would have been useful to explore the effect of this potential significant variable on the success of the mindfulness intervention. The fact that the intervention was based in a clinic may explain the lack of input from teachers who could have provided additional observational evidence for improvements to learning, which would have enhanced the credibility of Semple's (2010) findings.

Broderick and Metz (2009) conducted a classroom-based study with an older age group (average 17.4 years) using female participants only, which is cited in a number of articles on mindfulness for children (including Oberle et al (2012), Greenberg (2012) and Weare (2012)). Students participated in the Learning to BREATHE programme; a mindfulness curriculum designed to help students better understand their thoughts and feelings and learn skills to manage their emotions (see figure 1). Broderick and Metz (2009) claimed that the programme would also support attention, reflection, and motivation, therefore, improving the effectiveness of learning.

Pre and post-intervention measures indicated that participants experienced a moderately significant decrease in negative affect and increased calmness, relaxation and self-acceptance after participating in the programme. A number of self-report measures were utilised, consisting of subscales containing 4 to 10 items with relatively modest Cronbach's Alpha reliability measures ranging from 0.51 to 0.82. Participants' scores on the subscales are used to draw conclusions about the effects of the programme despite the varied internal reliability of the measures. The sample size of 120 students was relatively large, which increased the accuracy of effect size estimates and statistical generalisability of findings. Although Broderick and Metz (2009) stated the study utilised both quantitative and qualitative methods,

qualitative data was underrepresented. The use of older, female-only adolescents limits the extent to which findings could be reliably generalised to a younger age group and mixed gender population. Broderick et al (2013) carried out a similar large scale evaluation of the Learning to BREATHE programme with males and females of a similar age (average of 16.5 years), involving 216 students and found the experimental group experienced statistically larger gains in emotional regulation skills than the control group. Similar findings to Broderick and Metz (2009) added to the credibility and transferability of outcomes from the Learning to BREATHE programme to a similar age group, however, the replication of the study with a younger age group would be needed before generalising findings to a younger population at an earlier developmental stage.

- 1) Body awareness
- 2) Understanding and managing thoughts
- 3) Understanding and managing feelings
- 4) Integrating awareness of thoughts, feelings and bodily sensations
- 5) Reducing harmful self-judgements
- 6) Integrating mindful awareness into daily life

*Figure 1: Broderick et al (2013) Learning to BREATHE core themes*

Monchat et al (2013) carried out an exclusively qualitative study with eleven young people aged 16 to 24 years. Contributors to the article claim the study was the first qualitative study using a group of YP who could be described as nonclinical and not socially disadvantaged. Monchat et al (2013) reviewed the small number of qualitative studies in the field, and concluded that due to methodological and reporting limitations they lacked scientific rigour. It was argued that qualitative studies would add to the evidence base for mindfulness

interventions for children and YP by providing greater depth and clarity to research findings as well as offering a way to enhance the credibility of findings.

Although multiple methods of qualitative data collection were employed (open-ended interviews, a focus group and written and online feedback), the data was limited to capturing the views of the young people involved only. Multiple perspectives, such as parent and teacher perspectives were not explored and confirmatory data from other sources, which may have increased the credibility of Monchat et al's (2013) findings, was lacking. In addition, the sample size was relatively small. Despite these limitations, Monchat et al (2013) offered a refreshing insight into the views of the YP participating, overlooked and underemphasised in most other studies in this field, and the credibility of findings is enhanced when considered alongside other research findings. Participants reported on their experiences of the mindfulness intervention and a bottom up analysis of the data revealed common themes such as greater feelings of control over emotions, a greater understanding of themselves and others, and the development of a "mindset" associated with feelings of greater competence and confidence (see figure 2). Further analysis of Monchat et al's (2013) findings will be provided in the next section.

Jennings (2013) commented on the range of research in this field and concluded that more research was needed to determine the practices and techniques most appropriate for differing age groups as this had not received enough attention.

#### 2.4.Mechanisms of change

A theory of change for mindfulness would help to explain why and how mindfulness programmes produced desired change or outcomes in a given context. Cacioppo and Berntson (1992) suggested this phenomena could be explained in terms of events at a micro level of

analysis but that they might be more easily studied and more fully comprehended by referring to broader and multiple levels of analysis.

Research on mindfulness-based interventions for children and YP has largely focused on outcomes rather than process; for example, research investigating the outcomes of The Mindfulness In Schools Project ‘.b’ programme has tended to focus on outcomes (Hennelly (2011), Kuyken (2013)). Research into the mechanisms by which mindfulness affects children is limited and this gap in the literature has been acknowledged by Greenberg and Harris (2012) and Rempel (2012).

Greenberg and Harris (2012) encouraged the adoption of a developmental perspective in order to facilitate the development of theories of change applicable to children and YP. Greenberg and Harris (2012) recommended processes related to cognitive and social and emotional control be studied as potential mediators and called for greater integration of different research paradigms, rather than adopting a singular focus based on the researchers background and interests. Greenberg and Harris (2012) commented that collaborative research involving practitioners and scientists could lead to more valid theoretical models for how mindfulness worked for CYP.

#### 2.4.1. Micro-theories

A number of researchers have developed micro-theories for mindfulness. Barnard (2004) stated that micro-theories were restricted to propositions about the characteristics of the phenomena and the mechanisms that underpin it. Barnard (2004) suggested, however, that micro-theories on mechanisms could be more readily tested by empirical means and therefore stand up to scientific scrutiny but were less able to represent the complexity of a phenomena.

Tang et al (2012) proposed two neurobiological mechanisms underlying behavioural changes in response to integrative body-mind training (IMBT); an intervention described by the researchers as a form of mindfulness meditation. It was proposed that mindfulness meditation over time modified brain states (patterns of activity and activation of interconnecting brain networks) by increasing the brain-body connection of participants. Tang et al (2012) stated that neurological evidence for this hypothesis could be found from neuroimaging studies and EEG data, in which the Anterior Cingulate Cortex (ACC) and Autonomic Nervous System (ANS) were implicated. Tang et al (2012) discussed the evidence for the link between the IMBT and the proposed mechanisms of change associated with the ACC and ANS. The IMBT programme included body relaxation practices alongside mindfulness practices and so the extent to which one could make analytical generalisations to the theory of how mindfulness works from these findings is questionable. Furthermore, the studies Tang et al (2012) used as evidence for neurobiological mechanisms were conducted with mostly Chinese undergraduates and in one case preschoolers aged 4 to 5. Potential mediating variables, such as age and cultural factors, may have influenced outcomes for the participants; a methodological issue in this research field which was highlighted by Greenberg (2012). Neuroimaging and EEG data was used to suggest associations; an association between mindfulness meditation and increased activation of the prefrontal cortex, in particular the ACC, however the evidence was not sufficient enough to suggest a cause-effect relationship. Tang et al offered a reductionist and single level perspective on the mechanisms of mindfulness, which emphasised the role of neurobiology as an underlying mechanism.

Holzel et al (2010) used evidence analysed at a singular level to devise a theory implicating the role of Mindfulness-Based Stress Reduction programme in changes to the amygdala. In a relatively small longitudinal study using 27 participants, Holzel (2010) found participants

reported significantly reduced perceived stress following a MBSR programme which was correlated with a decrease in the right basolateral amygdala grey matter density. Holzel (2010) proposed that MBSR decreased perceived stress by decreasing grey matter density in the area of the brain responsible for mediating the way in which we respond to stress behaviourally and physiologically. Holzel (2010) admitted that it was difficult to determine if the relationship between perceived stress and changes in the amygdala were direct or indirect as only a few variables were measured and many variables were not controlled. Another unaccounted for variable may have increased with a decrease in stress, such as a lifestyle factor, which may have been more directly responsible for the changes to the amygdala. As the average age of participants was 35.7 years, it cannot be assumed that mindfulness practice would have the same effect on the brains of CYP, which are still developing.

Differing theories of change resulting from single level analysis have been proposed by researchers seeking to establish direct mechanisms by which mindfulness brings about changes in the brain and therefore enhanced mental functioning and wellbeing. Farb et al (2007) presented evidence from functional Magnetic Resonance Imaging (fMRI) that mindfulness training helped to dissociate areas of the brain responsible for self-referencing across time and self-referencing in the present and promoted experience of the self through a more present-centred focus rather than a narrative focus across time, which tends to be more judgemental and critical and, therefore, less mindful.

Studies which have utilised fMRI to explore the underlying neurobiological mechanisms of human functioning have been criticised by those such as Baddeley et al (2009), for the prevalence of inconsistencies in the data. Whilst neuroscientific evidence in the field of mindfulness is promising and has helped to develop theories on mechanisms of change, it is still a developing evidence base. More research is needed to confirm preliminary findings and

neurobiological data should be integrated with other levels of analysis, to take into account potential cognitive and social levels of mindfulness programmes and how these interact with ones neurobiological response to mindfulness practice. Most studies in this area acknowledged that moderating and mediating factors needed to be taken into account. Furthermore, the specific components of mindfulness need to be distinguished from non-specific factors, such as group support. Research exploring the interaction of process factors with outcomes will help to develop the theory of why mindfulness interventions work, and under what conditions outcomes might be enhanced.

Research exploring possible specific neurological mechanisms of change is still in its infancy in this research field and the evidence suggested that the effects of mindfulness practice are broad and wide ranging, implicating multiple brain areas and neural pathways.

#### 2.4.2. Macro-theories

Barnard (2004) commented that macro-theories had a broader scope and were more readily applied to real world contexts, but proposed mechanisms might have less predictive power. Barnard (2004) argued that broader theories could provide a more integrated and unified account for complex phenomena. A cognitive explanation of how mindfulness works rather than neurobiological theories might be more useful to practitioners, particularly as the evidence base for neurobiological mechanisms is in its infancy.

Siegel (2006) offered a theory of change, which was arguably more successful in capturing the complexity of mindfulness-based therapy and associated changes than Tang et al's (2012) explanation. Siegal's (2006) theory was based on broad and integrative research, which included findings from multiple domains such as biology and neuroscience, cognition and emotion. Siegal (2006) concluded that mindfulness-based therapy enhanced the process of

neural integration, which promoted the coherence of the mind and helped to develop empathy in relationships and increased overall resilience. Siegal (2006) argued that through this process mindfulness helped to develop ‘mindsight’, a term used to describe one’s capacity to perceive the mind of the self and others. Hyland (2011) proposed that mindfulness developed a learner’s meta-cognitive awareness, so that one was more able to see the ‘bigger picture’ rather than automatically adopting habitual patterns of thought and behaviour; a theory that closely resembled Siegal’s (2006) proposition.

Williams (2008) suggested that mindfulness training allowed people to recognise when a mode of mind was associated with rumination, avoidance, perfectionism and maladaptive self-guides, referred to as the ‘doing’ mode. Williams (2008) proposed that recognising when this mode was operating enabled people to disengage from it if they chose. An improved capacity to perceive the mind of the self, as proposed by Siegal (2006), might facilitate this process. Williams (2008) suggested that if one can perceive when one is operating in ‘doing mode’ then one is more able to switch into an alternative mode of mind orientated towards moment-by-moment experience in which thoughts are observed as mental events and judgemental striving for goals is acknowledged, accepted and then let go. Williams referred to this mode as the ‘being’ mode’.

Fell (2012) presented some neurobiological evidence for Williams’s (2008) theory by exploring evidence for the impact of mind wandering on our neurological functioning. Fell (2012) succeeded in integrating findings from multiple domains; a research approach that should help to develop more comprehensive and testable theories on mindfulness. Fell (2012) described mind wandering as engaging in a variety of thoughts remote from the ‘here and now’ such as thinking about past experiences and plans for the future. Fell (2012) acknowledged that mind wandering could be advantageous in evolutionary terms, leading to

better adaptation, but pointed out that it was associated with impaired task performance and negative emotions. Mind wandering is synonymous with the ‘doing’ mode referred to by Williams (2008).

Fell (2012) referred to neurobiological studies that had found mindfulness training reduced neural activations, associated with mind wandering, located in the default mode brain areas (parts of the medial prefrontal, medial temporal and parietal cortex, the posterior cingulated cortex and the precuneus). Furthermore, Fell (2012) stated that the findings of fMRI studies, such as those carried out by Pagnoni et al (2008) and Ives-Deliperi et al (2011), suggested that default mode brain areas were reduced to a greater extent in those who had practised mindfulness for longer, compared to novices. Although these findings illuminate how the levels of cognition and neurobiology might interact to produce desirable outcomes, the majority of studies cited by Fell (2012) compared the brain activity of those who had been practising mindfulness for years, and so these findings cannot be reliably generalised to those who have practiced for the shorter length of time associated with most mindfulness programmes.

#### 2.4.3. A theory to explain how mindfulness might work for children and young people

Zelazo and Lyons (2012) offered a holistic perspective on the mechanisms by which mindfulness might positively influence development in early childhood, integrating developmental, social and cognitive evidence and evidence from neuroscience to propose a conceptual model of change. This study acknowledged the need to consider how change is influenced by interactions at multiple levels rather than looking at evidence from one domain. Zelazo and Lyons (2012) proposed that there was evidence for a dynamic interaction between top-down (controlled) regulatory processes and bottom-up (automatic) influences on

behaviour in children, which changed with maturation. They argued that neural networks underlying reflection could be shaped by experience and strengthened with repetition. Zelazo and Lyons (2012) stated that reflection encouraged greater psychological distance from a situation, which they argued facilitated cognitive flexibility, working memory and emotional reappraisal. They suggested that mindfulness training developed children's ability to reflect on moment to moment experiences and therefore supported the development of self-regulation by enhancing top-down processes and reducing bottom-up influences, such as strong emotional reactions, anxiety and stress. The proposed theory of change specific to children complements William's (2008) theory, which suggested a greater control and flexibility over how to react to moment by moment experience, due to processes which could be equally described as self-reflective. Zelazo and Lyons (2012) recommendations suggested that children should not be viewed in isolation from the ecological systems they interact. They suggested that the influence of school and classroom factors on the efficacy of mindfulness interventions needed to be explored further; further justification for this study.

#### 2.4.4. Factors that might influence outcomes of MBIs for CYP

Carmody and Baer (2008) carried out a study examining how mindfulness practice, a factor associated with the process of mindfulness training, was associated with outcomes; in this case, levels of mindfulness. They found the duration of time spent at home engaged in formal mindfulness practice (e.g. body scan, mindful breathing, three minute breathings space) was significantly related to the extent to which levels of mindfulness and wellbeing improved, and psychological distress and perceived stress decreased, whereas informal practice (being mindful whilst carrying out routine activities) was unrelated to outcomes. This study highlighted the usefulness of studies with a focus on process and outcomes to practitioners, to inform practice and researchers to develop a theory of mindfulness for children.

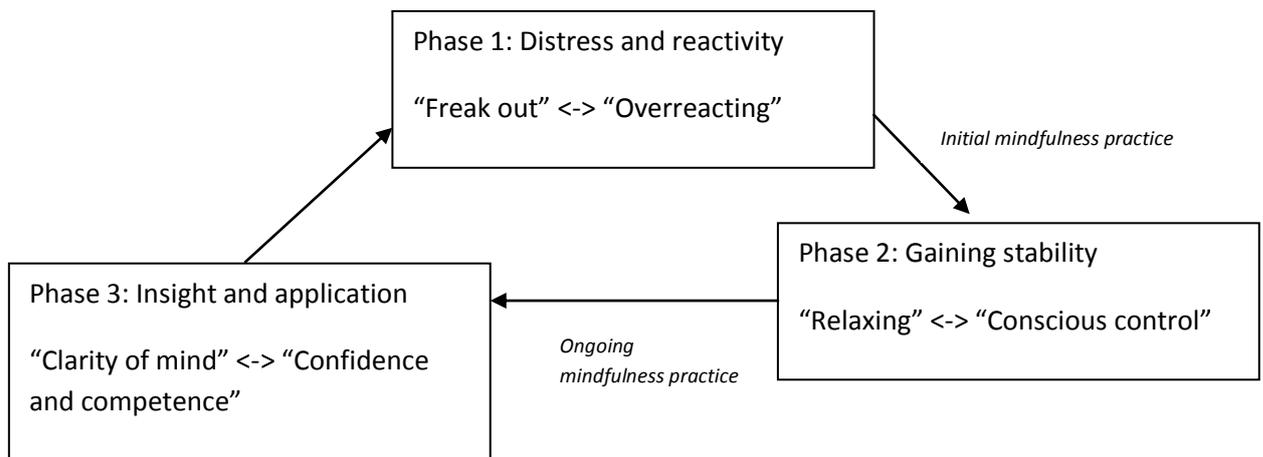
Huppert and Johnson (2010) also found a significant positive association between the amount of individual practice outside the classroom and improvement in psychological wellbeing and mindfulness, although they did not distinguish between types of practice participants engaged in. Napoli et al (2005) had also argued for the importance of practice, attributing their samples favourable outcomes to a longer programme of 24 weeks, which they argued allowed for increased repetition of practices.

#### 2.4.5. Findings from qualitative studies

Greenberg and Harris (2012) called for more systematic qualitative research in the field to explore processes of change related to mindfulness. Monchat et al (2013) offered an explanatory model of YP's experience with Mindfulness-Based on systematic analysis of qualitative data. It appeared that participants' experience progressed through three stages as outlined in figure 1; stage one was associated with distress and reactivity, stage two was associated with a period of stability in which participants feel a greater sense of control and stage three is achieved through ongoing mindfulness practice and is described as a period of insight and application in which participants became more competent in practising and applying mindfulness, which lead to greater insight. Monchat et al's (2013) qualitative methods were able to capture the complexity and subjectivity of the process, which is often lacking in other research in this field.

Interestingly, Allen (2009) conducted a similar study with adults in which participants' subjective experiences of Mindfulness-Based Cognitive Therapy (MBCT) were studied using interviews. Three themes emerged suggesting that participants had found the MBCT lead to a greater sense of control, degree of acceptance and an increased ability to express and meet their needs in relationships. A fourth theme related to participants experience of difficulty

with aspects of the MBCT. Some of Allen’s findings correspond with Monchat et al’s (2013) findings, such as feeling a greater sense of control, but other themes are absent from Monchat et al’s (2013) research, such as feelings of difficulty. It might be assumed that Monchat et al’s (2013) sample of participants did not experience a struggle or difficulty, which Allen (2009) suggested arose from a tension between wanting change and accepting experiences as they were and with feelings of personal failure; for example, associated with not being able to complete a homework assignment. Alternatively participants may not have had an opportunity to talk about the challenges encountered when practising mindfulness and participating in the intervention. More systematic qualitative research will be required with younger age groups in order to fully understand the subjective processes involved in MBI’s with opportunities for participants to share less positive experiences of mindfulness so that these experiences can be better managed.



*Figure 2. Relationship between phases and themes of young people’s experiences with mindfulness (Monchat et al, 2013)*

## 2.5. Who should teach mindfulness to children and young people?

Crane et al (2010) offered a UK perspective on who should teach mindfulness in terms of professional training and teaching competencies so that the integrity and fidelity of this growing field could be maintained as interest in the approach expanded. Crane et al (2010) stated that there were no formally defined standards and professional competencies for mindfulness-based teaching and highlighted the need to investigate how practitioner competencies were associated with positive outcomes by systematic methods. They concluded that inner qualities of mindfulness practitioners should be that of warmth, compassion, curiosity and care and the ability to be present. Furthermore, it was important for practitioners to be responsive and flexible to ensure a good pace and flow to sessions, an ability to guide practice using appropriate language and good relational skills. Crane et al (2010) suggested that practitioners should have foundation training, basic teacher training (including some training in Cognitive Behavioural Therapy), knowledge of the theory and practice of mindfulness and access ongoing supervision and professional development opportunities. Craner et al (2010) acknowledged the challenges of systematically investigating the link between practitioner competencies and outcomes due to the multifaceted and interactional nature of the teaching and learning processes of mindfulness programmes.

Kabat-Zinn (2003), a widely recognised authority in the field of mindfulness, stated that mindfulness could not be taught to others in an authentic way without practitioners practising it themselves. Hooker and Fodor (2008) suggested a criteria for teaching mindfulness that was less prescriptive, suggesting that a practitioner should have practiced mindfulness prior to teaching it, arguing that practitioners should practice what they teach. Segal et al (2002) made similar comments, comparing teaching mindfulness to teaching swimming; one would expect

a swimming teacher to be able to swim, as one would expect a mindfulness teacher to have experiential knowledge of practising mindfulness.

## 2.6. Mindfulness-Based Interventions and the role of Educational Psychologists

Mindfulness programmes have not yet established themselves as part of an educational psychologist's (EP's) practice and Davis (2012) highlighted that there was a greater body of research and practitioner experience on implementing MBI's within other fields. Thompson and Gauntlett-Gilbert (2008) were able to offer insight into the effective application of mindfulness for children and YP with a review of the evidence base emerging from the disciplines of child clinical psychology and psychiatry. The evidence base for the application of mindfulness in other areas of practice is less developed.

EPs work with children, parents and teachers in a broad range of settings and with children with a wide range of needs; from specific learning difficulties to broader learning difficulties and with social and emotional difficulties. Davis (2012) suggested that EP's could potentially introduce mindfulness to the different populations they worked with, to address difficulties experienced across a range of domains. Iyadurai et al (2014) recommended that before EPs could fully embrace this work the skill sets EPs required to deliver MBI's needed to be clearly articulated and agreed to ensure the fidelity of programmes and high quality delivery.

Davis (2012) highlighted the methodological challenge for EPs to measure mindfulness in a way in which its complexity was represented, by capturing its manifestations in the cultural, social and psychological systems. In addition, the need for ongoing research on how mindfulness could be best delivered to CYP was also raised by Davis, a need also identified by Jennings (2013).

## 2.7. Mindfulness and anti-oppressive practice

This section was included in order to review the literature that highlighted the ways mindfulness might be used within the social systems in which the researcher and TEP operated. The researcher also wanted to ensure that due consideration was given to wider ethical issues associated with the application of mindfulness in the research process.

Dominelli (2002) described how challenging inequality and transforming social relations was integral to anti-oppressive practice and that self-knowledge helped practitioners to practice reflectively.

Reverly (2014) referred to the pathology-proofing of children and suggested the practice of mindfulness in schools was potentially oppressive. Langer (1997) offered a more optimistic view in which mindfulness offered an alternative, less oppressive view to traditional theories of intelligence which have implications for learning goals. Langer (1997, p.114) argued that mindfulness challenged basic assumptions about labelling situations as “problems” to be resolved , by encouraging flexible and creative thinking:

‘From a mindful perspective, one’s response to a particular situation is not an attempt to make the best choice from among available options but to create options.’

Hyland (2011) stated that the affective dimension of educational activity was linked to learners’ interest and motivation and to a better understanding of human values and emotions, which Hyland (2011) argued lead to more of a rounded development of learners. Hyland (2011) argued that education itself was in need of therapy due to an over emphasis on, academic outcomes over all other outcomes for CYP. Hyland (2011) explored the potential of mindfulness to readdress the balance between academic outcomes and a more holistic

education for CYP. It is suggested that mindfulness was a concept which was closely connected with the potential for education and learning to transcend academic outcomes.

Reverly (2014) argued that in the current political and economic context, aspects of the education system were becoming increasingly commercialised and academic outcomes increasingly prioritised. Reverly (2014) cautioned that mindfulness might be packaged to schools to appeal to their aspirations for improved academic outcomes; for example, emphasising cognitive gains, such as improvements to attention. Reverly (2014, p.1) warned that rather than challenging oppressive pedagogies and empowering learners, mindfulness could be used as a ‘human enhancement strategy’; a tool to use to help prepare the next generation of workers by enhancing their resilience to pathologies and attentional skills, so that they are of greater economical value. Reverly (2014, p.15) stated that mindfulness was originally intended for a personal quest for self-awareness, but has been ‘converted into a treatment for pathologies that stem from a system which exploits youth’. Reverly (2014) argued mindfulness training could be a way of manipulating CYP without their moral consent and that advocates of mindfulness failed to recognise that the system itself needed to change. Reverly (2014) acknowledged that the goal of enhanced wellbeing was obviously of value and was morally defensible, however, suggested other motivations for implementing mindfulness interventions in schools should be viewed with caution.

Jennings (2013) also suggested it is vital to take into account the current political climate and curriculum when incorporating mindfulness into schools stating that a school-based mindfulness initiative would have to navigate these waters. Iyadurai et al (2014) also described the challenge for EPs in embedding mindfulness practice into schools.

## 2.8. Concluding comments

Research on the benefits of mindfulness for children covered a broad range of areas, including attention, executive functioning and social and emotional wellbeing, reflecting the range of positive outcomes experienced by participants as reported in the research. The exact mechanisms of change are largely unknown although there is a growing body of neuroscientific evidence and although there is a comprehensive theoretical cognitive explanations for how mindfulness might bring about positive change, there is a lack of consensus. Children and young people's views are under-represented, most often reported anecdotally in which unsystematic methods of analysis are utilised, perhaps missing opportunities to illuminate the process of change further. The evidence base for the effectiveness of MBI's delivered in school settings is in its infancy, although there have been promising findings from projects in the UK such as the Mindfulness in Schools project. Much is unknown about the factors associated with the process of MBIs for CYP which may influence outcomes and the predominant focus of research has been on outcomes. Measures of mindfulness have been developed for use with children which appear to have good reliability and validity, although they are largely subjective.

The degree of training required to teach mindfulness is an area of contention. More research within the EP field is needed to determine the experience and skills set needed by EPs in order to maintain the fidelity of MBIs.

## CHAPTER THREE

### METHODOLOGY

The methodology section sets out to provide the information needed for the reader to assess the credibility of the study's findings and to replicate the study. The researcher's view of reality and how it has influenced the study's design is made explicit so that judgements can be made concerning possible sources of researcher bias. An outline of the methods and tool selected for data collection are provided, along with a justification for their use. The procedures for analysing data are described with an explanation regarding why they were chosen. The limitations of the method are explored, in addition to the assumptions made by the researcher.

#### 3.1. Epistemology

A pragmatic approach was adopted for this study. Pragmatism offers an alternative to a positivist, singular view of reality discoverable by objective and value-free inquiry through quantitative research methods. It also differs from a social constructivist view of reality in which multiple, subjective realities are investigated via qualitative methods. It is less so concerned with the pursuit of a mirror of reality, and more focused on solving the practical problems of the "real world" (Feilzer, 2009).

This shift in orientation frees pragmatism from the theoretical and methodological constraints associated with membership to positivist or constructivist paradigms. Kuhn (1962, 148-150) referred to the term incommensurability to describe the lack of overlap between the

conceptual frameworks and language used within positivist and constructivist paradigms. Morgan (2007) pointed out that rather than treat incommensurability as a barrier to mutual understanding, it could be viewed as an opportunity to explore a single “real world” and a subjective world. Morgan (2007) recommended an intersubjective approach which acknowledged this duality and rejected the argument that there was a need to choose between two extreme stances.

Feilzer (2009) suggested that a pragmatists’ view of the world closely resembled Dewey’s (1925) description of an existential world in which multiple layers of reality exist; it is both objective and subjective. Dewey (1925) described these layers as both stable and precarious and that with patterns of predictability and consistency there always exists uncertainty, especially when studying human phenomenon. Feilzer (2009, p.13) described how pragmatism

‘....acknowledges the existence of structural regularities that are moderated by the unpredictability of human nature. Thus causal relationships can apply “most of the time” unless the “human element” undermines and changes them’

Teddle and Tashakkori (2009) described pragmatism as an acceptance of uncertainty and that causal relationships are susceptible to change because of the unpredictability of the context in which the research is conducted.

### 3.1.1. Methodological implications

Feilzer (2009) proposed that mixed methods research was a way of measuring and observing the different layers of phenomena described by Dewey (1925). Feilzer described how qualitative methods could be used to investigate some aspects of a phenomena and quantitative methods others. Bryman (2007) suggested that in order to transcend the barriers

between different methodologies, findings from both should be presented side by side.

Pragmatists, such as Morgan (2007), suggested data presented from both methods in an integrated way was a move towards the pragmatists' aim of furthering a process of inquiry by evaluating the results of prior inductions.

Morgan (2007) described a typical pragmatic approach as intersubjective, working outside the dichotomy of the subjective and objective and challenging the incommensurability of the two by acknowledging both as elements of social phenomena. Morgan also argued that pragmatism challenged the usefulness of making the distinction between knowledge that is either specific and context-dependent or universal and generalised. It is argued instead that researchers should be most concerned with the transferability of knowledge, investigating the factors that affect whether the knowledge we gain can be transferred to other settings and what our evidence is for its transferability. Morgan (2007, p.72) summarised the argument by stating that pragmatists are most concerned with

‘what people can do with the knowledge they produce and not on abstract arguments about possibility or impossibility of generalisability’

In order to fulfil the requirements of this approach, Feilzer (2009) recommended that methods used be transparent and replicable.

### 3.2 Mixed methods research design

Johnson et al (2007) reviewed the definitions of mixed methods research provided by 31 researchers in the field to devise a definition. Johnson et al (2007, p.118) concluded that:

‘Mixed methods research is the type of research in which a researcher...combines elements of qualitative and quantitative research approaches (e.g., use of qualitative

and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purpose of breath and depth of understanding and corroboration'

Greene et al (1989) defined quantitative methods as methods designed to collect numbers and qualitative methods as methods designed to collect words.

Traditional, experimental intervention designs were rejected in favour of a mixed methods intervention design as it was judged best suited to address the gaps in the research as identified by the literature review and research questions. Patton (2002) described the limitations of an experimental design as a narrow focus on carefully controlling cause and effect to improve the internal validity of the findings, but at the expense of the relevance of the findings beyond the highly controlled experimental situation. A mixed methods design was better suited to exploring the complexity of the process of a mindfulness intervention delivered in a school setting. Yin (2010) described how traditional experimental methods, such as Randomised Controlled Trials (RCTs), were limited in the extent to which they could illuminate how and why something worked. The literature had highlighted a number of broad outcomes of mindfulness interventions for children and young people, but the theory of how and why these outcomes were associated with mindfulness interventions was underdeveloped. This study aimed to examine some of the variables involved in the process of a mindfulness intervention, some of which could not be easily separated from the context in which the intervention was delivered.

Yin (2010) described how mixed methods research favoured an integrated approach in which the same research questions are shared and complementary data is collected. Shenton (2004) argued that if similar results emerged from different sources that this added credibility to findings and gives a better view of reality.

### 3.3. The intervention design

In order to evaluate the intervention and answer the research questions the researcher utilised an intervention design so that changes from pre- to post-intervention could be analysed, which might signal the possibility that the intervention contributed to those changes (see table 2 for outline of research process and timeline). An experimental perspective would lead to criticism of the lack of control or comparison group and the lack of follow-up data collected, arguing that the validity of findings was threatened. A counterargument is offered suggesting the credibility (i.e. validity) of findings is strengthened by corroborating findings from multiple data sources, and from evidence that outcomes were repeated across two groups.

To evaluate the Mindfulness-Based Intervention (MBI), the following research questions needed to be addressed:

1. In what ways might MBIs be beneficial (or not) to 12 and 13-year-old students?
2. What processes influenced the outcomes of this MBI?
3. What themes emerged to illustrate how the hoped for outcomes were (or were not) experienced by the students?

The literature reviewed revealed a lack of depth in evaluations of mindfulness interventions, which often focused on outcomes. This study set out to gather richer data on the process and outcomes of an intervention delivered in a context designed to mirror the complexities of real life as much as could be achieved within a research context. In this study, the subject of evaluation was the mindfulness intervention delivered to 12 and 13-year-old students.

*Table 2: A sequential intervention design: groups A and B are run in parallel*

<b>Stage of research process</b>	<b>Data collected (and from whom)</b>
Stage 1: Pre-intervention (June 2014)	<p>Strength and Difficulties Questionnaire (SDQ) (student, teacher, parent scores)</p> <p>Child and Adolescent Mindfulness Measure (CAMM) (student scores)</p> <p>Structured observation (student observed in lesson)</p>
Stage 2: Intervention (June-July 2014: 11 sessions across 6 weeks (two sessions per week for each group))	<p>Child Group Session Rating Scale (CGSRS) (student session evaluation)</p> <p>Weekly evaluation questionnaire (Teaching Assistant evaluation)</p>
Stage 3: Post-intervention (July 2014)	<p>SDQ (student, teacher, parents scores)</p> <p>CAMM (student scores)</p> <p>Observation (student observed in lesson)</p> <p>Semi-structured interview (student)</p>

The evidence collected was used to determine if the researcher's propositions derived from the existing evidence base were correct or if alternative, rival explanations need to be considered. It is expected that the study will contribute to an evaluation of mindfulness based interventions delivered in school settings by practitioners who have some experience of

mindfulness practice but are not formally trained as a mindfulness teacher. The MBI was delivered to two groups with four students in each; described as Group A and Group B. Each group was studied as a case of an MBI delivered by a Trainee Educational Psychologist (TEP) in a school setting to a group of year 8 students. An analysis of both group and individual student's outcomes were needed to address the research questions about the benefits of MBI's and how and why they might work. It was hoped that similar outcomes could be predicted for both Group A and Group B on the basis of a review of the literature. If the outcomes of the MBI for one group were also replicated in the other group this would strengthen the theory, an approach that Yin (2010) described as replication logic. It would also provide evidence to indicate that MBI's could be delivered by a TEP in the school setting whilst maintaining its fidelity and would be evidence of the transferability of MBI outcomes. The same outcomes were expected in each group regardless of individual differences in group members as the literature suggested that outcomes could be beneficial for all children.

Theoretical propositions leading to data collection choices were created from a review of the literature on the outcomes and mechanisms of change associated with MBIs:

1. Participation in the MBI will be associated with improved mindfulness for the students.
2. Participation in the MBI will be associated with benefits in social, emotional and mental wellbeing and learning. Specifically, the MBI will help to reduce the difficulties experienced by the students and perceived by their teachers and parents. The MBI will enhance social and emotional wellbeing and improve attention.
3. The study will show the MBI's benefits were dependent on a number of contextual factors which are embedded within the MBI, such as successful group delivery, therapist rapport with the groups and the student's active participation in the

intervention (measured by good attendance, engagement with practice, viewing the skills learnt within the MBI as important to them, and appropriateness of the session for the age and developmental level of the students).

4. The study will illuminate the process of change experienced by the students, associated with the practice of mindfulness.

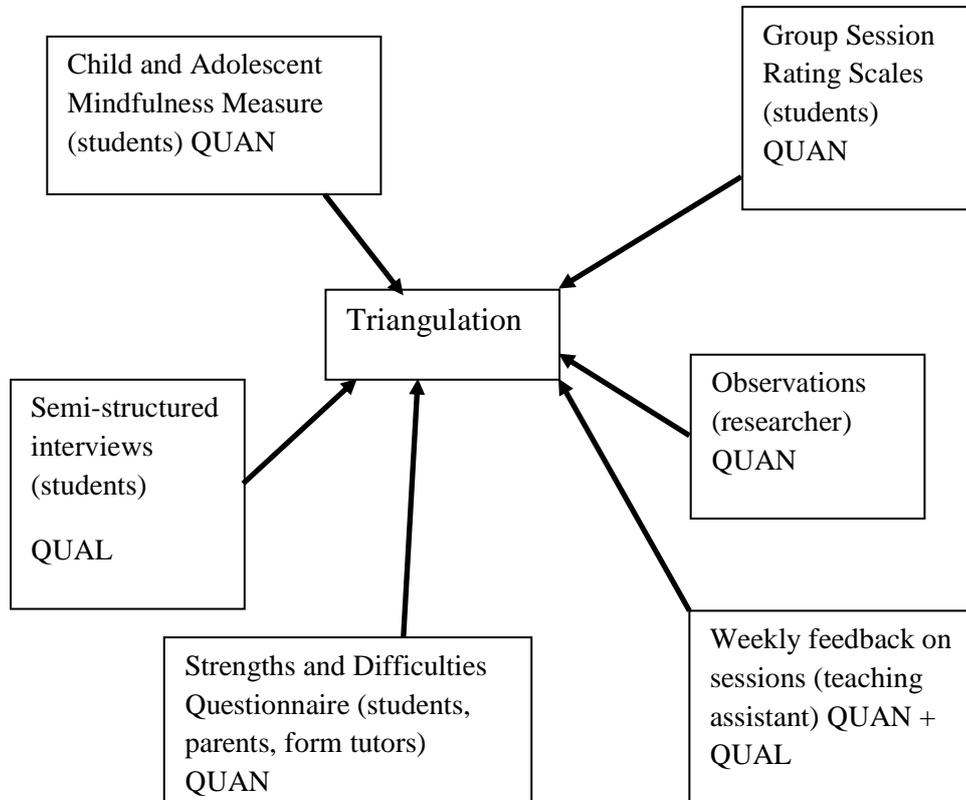
The following alternative or rival theories will also be considered:

1. The MBI will fail to produce desired outcomes when delivered by a Trainee Educational Psychologist not formally trained as a mindfulness teacher with limited experience in delivering MBIs in school settings.
2. The MBI will fail to produce desired outcomes as the intervention has been adapted to a degree that affects its fidelity and so has not been successfully transferred from a clinical setting into a school setting.

### 3.4. Data Collection

Johnson et al (2007) described the aim of a mixed methods approach to selecting data collection methods as choosing a combination of methods which have different weaknesses, achieved by considering the strengths and weaknesses of different approaches. Denzin (1978) suggested that this helped to cancel out the biases of each approach or method (a summary of the researcher's consideration of the strengths and weaknesses of approaches and tools used can be found in table 3). Greene et al (1989) suggested that inferences made from each type of data derived from different methods could be used to confirm, corroborate or confound each other. This view was also expressed by Gorard (2010) who argued that triangulation could be

used to juxtapose data and viewpoints to get closer to the truth. A between-method triangulation was used in this study, described by Johnson et al (2007) as the use of both quantitative and qualitative approaches. Figure 3 represents how triangulation was achieved in this study.



*Figure 3: a diagram to represent the different methods that contributed to triangulation*

Table 3: strengths and weaknesses of methods and tools

Data source	Quantitative (=QUAN) or Qualitative (=QUAL)	Rationale for use (i.e., research question (RQ) addressed)	Details of data collection techniques employed and evidence for credibility	General Strengths of data collection technique (Cohen et al, 2011)	General limitations and sources of bias (Cohen et al, 2011)
Questionnaires	QUAN  QUAL	<p>Data collected for RQ 1 (benefits of MBIs) using SDQ and CAMM</p> <p>Data collected for RQ 2 (processes involved) using CGRS and teaching assistant questionnaire</p>	<p>CAMM developed and validated by Greco et al (2011) who found it reliably measured mindfulness (reliability coefficient= 0.81) (QUAN)</p> <p>SDQ developed by Goodman (1997) to measure strengths and difficulties. Stone et al (2010) reviewed 48 studies and concluded parent and teacher SDQs had strong psychometric properties. Mason et al (2012) found evidence that SDQ was sensitive to change over time. (QUAN)</p> <p>CGRSRS developed by Duncan et al (2011) to track outcomes across group sessions.(QUAN)</p>	<p>Quick and easy to administer</p> <p>More reliable as greater degree of anonymity achieved</p> <p>Straightforward to administer and analyse</p> <p>Influenced less by researcher bias as limited interpretation of responses required</p>	<p>Limited flexibility of response</p> <p>Produces unsophisticated data of limited scope</p> <p>Questionnaires designed by researcher not validated (nor is CSGRS)</p>

			Teaching assistant questionnaire developed by researcher (QUANT and QUAL)		
Observations	QUAN	Data collected for RQ1 (to test theoretical proposition of improved attention)	Cognitive Abilities Profile used, developed by EPs Deutsch and Mohammed (2010)  On/off task behaviour observation schedule developed by researcher	Opportunity to gather 'live' data from naturally occurring situations, producing more valid and authentic data.  Strong ecological validity  Helps researcher to understand context of research situation	Researcher bias- how do we know if judgements will be the same for each observation?  Presence of researcher may bring about different behaviours in participants  Lack of control; observations sensitive to context
Semi-structured interviews	QUAL	Data collected in relation to RQ1, RQ2 and RQ3	Schedule of open-ended questions developed by researcher	Allows researcher to capture participants unique way of experiencing and viewing the world  Opportunities to probe for greater depth	Researcher bias; researcher looking for evidence to support preconceived notions  Researcher misperceiving what respondent has said

				<p>Respondents answer the same questions increasing comparability of responses and reducing interviewer bias (Patton, 2008)</p>	<p>Respondent misunderstanding what has been asked</p> <p>Interview questions not validated- how do we know they measure what they intend to?</p> <p>Anonymity from researcher not achieved so responses may be less biased and more susceptible to social desirability bias- respondent wanting to be seen in a socially desirable way by researcher</p>
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### 3.4.1.Exploring theoretical propositions

The collection of data is described in relation to the research questions and theoretical propositions that the type of data will help to confirm or refute. The description of methods indicates the degree of triangulation of data sources involved so that the degree to which the data converged (or diverged) could be analysed for each research question.

Yin (1994) stated that for a study to be credible the correct operational measures for the concepts being studied needed to be employed. The review of the literature helped to identify possible outcomes, how to measure them, and develop what Glaser and Holton (1978) described as theoretical sensitivity so that the researcher could attribute meaning to the data and separate out what was pertinent from what was not. Identifying measures from which data could be collected that strengthened the studies credibility and had meaning to the research community was particularly important from a pragmatic perspective.

Evidence for research question 1, 'In what ways might Mindfulness-Based Interventions (MBIs) be beneficial (or not) to 12 and 13-year-old students?' was collected in the following ways:

- Quantitative data was collected using the questionnaire, the Child and Adolescent Mindfulness Measure (CAMM) developed and validated by Greco et al (2011) and qualitative data from semi-structured interviews to test the theoretical proposition that the MBI will be associated with improved mindfulness was also collected.
- Quantitative data was collected using the questionnaire, the Strength and Difficulties Questionnaire (SDQ) developed by Goodman (1997) and validated by Stone et al (2010) to test the theoretical proposition that participation in the MBI was associated with a reduction in difficulties experienced by the students and perceived by their

teachers and parents. Qualitative data from semi-structured interviews was also used to confirm or refute this proposition.

- Qualitative data was collected using semi-structured interviews to explore students' views on the perceived benefits of the MBI.
- Quantitative data from structured observations was used to test the theoretical proposition that MBI's are associated with improved attention and learning. The structured observation schedule, the Cognitive Abilities Profile, developed by EPs Deutsch and Mohammed (2010) was utilised along with an on/off task behaviour schedule developed by the researcher. Each student was observed individually, in their natural classroom learning environment for 20 minutes.

Data was collected to find evidence for research question 2, 'What processes influenced the outcomes of this MBI?' to explore the variables important to the MBI's success. The researcher accounted for variables such as successful group delivery, therapist rapport with the groups and the student's active participation in the intervention (measured by good attendance, engagement with practice, enjoyment of sessions and viewing the skills learnt within the MBI as important to them). The appropriateness of the session for the age and developmental level of the students was also examined. Data was collected using the following methods:

- Quantitative data was collected using the Child Group Session Rating Scales (CGSRS) developed by Duncan et al (2011); session-by-session ratings from each student were obtained on different aspects of the session. Ratings were given on the extent to which the leader or group listened to them (measure of therapeutic rapport and sense of belonging to group), the extent to which they talked about or did important things, the extent to which they liked what they did during the session

(measure of enjoyment and engagement) and an overall rating suggesting how ‘good’ the session was for the student. Quantitative and qualitative data from the Teaching Assistant attending the sessions was also used to collect evidence for this proposition.

- Qualitative data was obtained from semi-structured interviews to explore students’ views and was also used to collect data for this research question. This data illuminated the process of change experienced by the students, associated with the practice of mindfulness.
- Quantitative data on student’s levels of attendance at the sessions as a measure of participation.

Evidence of the research question ‘What themes emerged to illustrate how the hoped for outcomes were (or were not) experienced by the students?’ came exclusively from qualitative data collected using semi-structured interviews with the participating students.

### 3.5.Data analysis

This section explains how the data generated was analysed by the researcher. Yin (2010) described how use of multiple sources of evidence, allows the researcher to look for the extent to which data converges, and diverges using triangulation. Reicher and Taylor (2005) suggested that rigour could be achieved by using a systematic method whose assumptions were congruent with the way the subject matter was conceptualised. Patton (2002) suggested that the credibility of a study could be enhanced if the researcher employed rigorous, systematic methods that yielded high quality data and argued that it minimised the influence of the researcher’s predispositions and biases on findings.

### 3.5.1. Quantitative data analysis

Spencer et al (2003) argued that a high quality evaluation study should provide a description of the form of the original data and evidence of how descriptive analytic categories have been generated and used. These details will be discussed in relation to each method.

#### *Child and Adolescent Mindfulness Measure*

Greco et al (2011) designed the Child and Adolescent Mindfulness Measure to assess the mindfulness skills of children and adolescents (see appendix 1). Total scores on the CAMM were derived by reverse scoring responses to items on a 5 point scale (never true, rarely true, sometimes true, often true and always true) and summing responses to the 10 items (see appendix 1).

#### *The Strength and Difficulties Questionnaire (SDQ)*

The Strength and Difficulties Questionnaire (SDQ) was designed as a screening instrument by Goodman (1997) to measure 25 attributes in 4 problem domains (see appendix 2). It measures the domains of Conduct Problems, Inattention-Hyperactivity, Emotional Problems and Peer Problems to give a Total Difficulties score, as well as offering a Prosocial Scale. The Total Difficulties score was calculated by adding the scores from all the scales except the Prosocial scale, with the resulting scores ranging from 0 to 40. It is designed for use with children aged 3 to 16 years and is completed by teachers, parents and the self-report version for children over 11 years-olds was used with students. An 'Impact Supplement' is included in extended versions of the parent, teacher SDQ's in which respondents are asked if they think the child or adolescent has a problem with emotions, concentration, behaviour or getting on with other people. The response to this item is rated on a 4-point scale indicating no difficulties (0 points), minor difficulties (1 point), definite difficulties (2 points) and severe difficulties (3 points). If respondents perceived no difficulties they were not required to answer the

questions that followed. If they answered 'yes', the parent or teacher was then asked about the length of time the difficulties had been present for, the extent to which they upset the child or young person and chronicity, distress, social impairment, and burden for others. The Impact Supplement on the student SDQ for 11-16 year olds was also utilised.

#### *The Child Group Session Rating Scales (CGSRS)*

Students rated 4 aspects of the MBI; the extent to which they felt the leader or group listened to them, that they talked about or did important things, the extent to which they liked what they did during the session and an 'overall' rating suggesting how 'good' for the student the session was. The position of a cross drawn along a 10cm line in between two opposing, polar statements was used to indicate a rating out of ten for each of the four areas. The position of the cross was then converted into a score out of ten (see appendix 3).

#### *Statistical analysis of data obtained from CAMM, SDQ and CGSRS*

Brace et al (2003) described descriptive statistics as procedures used to summarise large volumes of data.

Brace et al (2003) would describe the data collected with the CAMM, SDQ and CGSRS as ordinal in nature, as the scores can be justifiably ordered or ranked, but the interval between the points on the rating scale are not the same. As the data obtained was ordinal, obtaining the mean was not be the best measure of average scores for the group, as Brace et al (2003) cautioned, therefore, the median was calculated. The median was calculated for the 8 participants as a whole and for the separate groups; Groups A and B.

The researcher analysed the data by comparing the median's and emerging patterns in scores for the two groups and for the individual students, comparing differences and commonalities

in the data to generalise to theories about MBI's. Yin (2010) suggested one could make analytical generalisations whereby findings are generalised to theories. Yin (2010) stated that analytical generalisations either resulted in the findings corroborating with existing theoretical concepts, or could contribute to a modification, rejection or advancement of a theory.

Lund and Lund (2013) described the Wilcoxon Matched-Pairs Signed-Ranks test as a non-parametric test (i.e., inferential test that makes few assumptions about the data) which is suitable for evaluating the data, in which normality is not assumed and is used to compare two sets of scores from the same participant. In this study the SDQ and CAMM pre-intervention scores were compared with post-intervention scores. The Wilcoxon test was carried out using SPSS; a data analysis software programme, and the outcome indicated if the change in scores was statistically significant or not. The change was judged to be statistically significant if the p value, or probability that the difference was due to chance alone was less than 0.05. If statistical significance was found for changes to median scores on either the CAMM or SDQs, the effect size would then be calculated. Fitz-Gibbon (1985) described the effect size as a measure of divergence from the null hypothesis, which is in this case that the pre- and post-intervention medians were the same, with larger effect sizes indicating greater divergence from the null hypothesis. In order to increase the sample size, so that this test was more reliable, the medians for the group of 8 participants as a whole were utilised.

#### *Teaching Assistant weekly evaluation questionnaire*

The TA filled out a weekly session evaluation questionnaire, designed by the researcher (see table 4), consisting of a mix of questions; the TA was asked to rate six aspects of the sessions (age appropriate context, age appropriate language used by the session leader, pupil engagement, pupil enjoyment and perceived benefit to the pupils, quality of student-leader

interactions) on a 5 point scale and 'Group cohesion' on a 3 point scale (very cohesive, somewhat cohesive and not cohesive). The ratings for 'Group cohesion' were transformed into 5 points for 'very cohesive', 3 points for 'somewhat cohesive' and 0 point for 'not cohesive' so that this rating could be compared with the ratings on a 5-point scale. In addition, the TA answered open questions to provide an opportunity to give more of an in depth perspective on aspects of the session that had gone well (or not).

*Table 4: a table explaining the rationale behind questions asked on TA's weekly session evaluation questionnaire in relation to research questions and theoretical propositions*

<b>Closed Questions</b>	<b>Why included?</b>
<p>Ratings (out of 5 (5=very much, 1=not at all)) for</p> <p>Age appropriate content</p> <p>The session leader used age appropriate language</p>	<p>To evaluate the extent to which sessions were successfully adapted to the age of participants</p>
<p>Ratings (out of 5) for</p> <p>The pupils were engaged</p> <p>The pupils enjoyed the sessions</p>	<p>To evaluate the extent to which pupils actively participated in the MBI</p>
<p>Rating (out of 5) for</p> <p>Perceived benefit to pupils</p>	<p>To evaluate the extent to which the students benefitted from the MBI</p>
<p>Score for group cohesiveness</p> <p>Circled either 'very cohesive' (=score of 5), 'somewhat cohesive' (=score of 3) or 'Not cohesive' (=score of 1)</p>	<p>To evaluate potential impact of process variables associated with the group (TA asked to rate 'how united the group is as a whole and how attracted are the individuals to the group based on respect, liking or trust')</p>
<p>Score for 'The level of interaction between the session leader and the students'</p> <p>Circled either 'excellent' (=5), 'very good' (=4), 'good' (=3), 'satisfactory' (=2), 'poor' (=1)</p>	
<b>Open-ended questions</b>	<b>Why included?</b>
<p>What did you like about the sessions this week?</p>	<p>To evaluate variables associated with the success of the MBI that could illuminate how the MBI worked.</p>
<p>What did not go so well this week?</p>	<p>To explore propositions that MBI was not successful and failed to produce hoped for outcomes</p>

Any other comments?	To leave room for TA to mention aspects of the MBI that the researcher had not accounted for.
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*Structured observation: Cognitive Abilities Profile (CAP)*

Participants were scored on the ‘Attention’ and ‘Behaviours Affecting Learning’ components of Section A of the CAP. Participants were scored on a 5 point score (N- Not observed, 1- Not able, even with support, 2- Only able with support, 3- Sometimes able/Inconsistent and 4- Independently able) on items such as ‘Regulation of attention’ and ‘Persistence and task completion’.

*Structured observation: On/off task behaviour*

In addition to scores on the CAP, pre- and post-intervention measures of attention were obtained using an observation schedule in which on/off task behaviour was recorded at 2 minute intervals for 20 minutes. ‘On’ task behaviour was recorded with a tick and ‘off’ task behaviour was recorded with a cross. On task behaviour was identified as behaviours in which attention was directed towards the learning task.

The raw data collected from observations was used by the researcher to look for changes in behaviour of the students and was not subject to transformation.

3.5.2. Qualitative data analysis

*Semi-structured Interview*

The semi-structured interview was analysed using the method of thematic analysis. The researcher transcribed each post-intervention interview with the student from an audio recording and analysed the data through a process of induction. Patton (2008) described

inductive analysis as discovering patterns, themes and categories in the data which are used to verify theories and propositions. A semantic approach was adopted, which Braun and Clark (2006) described as the identification of themes within the explicit or surface meanings of the data. The researcher aimed to capture patterns or themes in the data that related to the research questions (see table 5). Guest et al (2012) described how key themes are identified and transformed into codes. The researcher followed the recommendations of Boyatzis (1998) and sought to use codes that used a few words to communicate the theme, ensure the code was conceptually meaningful and close to the data to reduce the degree that the data was interpreted, which could have increased the risk of researcher bias.

*Teaching Assistant weekly session evaluation questionnaire*

The two open ended questions on this questionnaire (see table 4) were used anecdotally as a way of checking degree of convergence or divergence with the researchers weekly perspective on the success of the MBI's for each group. As no systematic method was used to analyse this data it is subject to the researcher's interpretation and, therefore, researcher bias.

*Table 5: a table explaining the rationale behind questions asked in semi-structured interview in relation to research questions and theoretical propositions*

<b>Open-ended Questions</b>	<b>Why included?</b>
Which activities did you enjoy most and why?	To explore what processes influenced the outcomes of the MBI, in what ways they were beneficial to students and how outcomes were experienced by students.
Which activities did you enjoy least and why?	To explore propositions that MBI was not successful and failed to produce hoped for outcomes. To explore process variables associated with the success (or not) of the MBI.
What does being mindful mean to you?	To explore what processes influenced the outcomes of the MBI, in what ways they were beneficial to students and how outcomes were experienced by students.
Do you think mindfulness activities can help you in any way in your daily life?	To explore what processes influenced the outcomes of the MBI, in what ways they were beneficial to students and how outcomes were experienced by students.
Have you noticed any differences in the way you think since completing this mindfulness course?	To explore what processes influenced the outcomes of the MBI, in what ways they were beneficial to students and how outcomes were experienced by students.
Have you noticed any changes at school since completing the course?	To explore what processes influenced the outcomes of the MBI, in what ways they were beneficial to students and how outcomes were experienced by students.
Do you think you will practice mindfulness activities in the future?	Intention to practice in the future used as an indication of degree to which they felt mindfulness practice was important and worthwhile to them.

### 3.6. Selection of participants

Participants selected were aged 12 to 13 years old students belonging to Year 8. Their participation was dependent on the consent of their parents (in all cases this was the participant's mother) and Form Tutors. Pupils attended a Local Authority mainstream secondary school in the East Midlands. The researcher's supervisor was linked EP to the school and in the preliminary stages of the study, was able to approach them on my behalf to see if the school would be interested in the MBI for their students. The researcher was able to take advantage of the existing relationship between the school and the researcher's supervisor in order to access appropriate participants for this study.

Selection of student participants was a collaborative process, in consultation with the school's Special Educational Needs Co-ordinator (SENCO). It was important that pupil participants were representative of learners with varying needs and abilities in order to determine that the benefits could be replicated regardless of individual differences. Data collected from pre-intervention Strength and Difficulties Questionnaires (SDQ) completed by the pupils, Form Tutors and parents helped to develop a profile of the extent and nature of difficulties the students were experiencing. Students were excluded from the study if they were currently receiving input from other outside agencies, although outside agencies may have had past involvement.

The sample consisted of 8 students, of which three had formal identifications relating to Special Educational Needs (SEN) (see table 6 for a description of cases). Students were randomly assigned to two groups with 4 (2 male, 2 female) in each group; Group A and

Group B.

In addition to pupil, parents and Form Tutors, a Teaching Assistant was also invited to participate by attending sessions and provided weekly evaluative feedback on the sessions.

*Table 6: description of student participants' difficulties*

<b>Participant ID</b>	<b>Age</b>	<b>Gender</b>	<b>Formal identification of SEN</b>	<b>Difficulties identified during selection process</b>
1	13	M	Emotional, Social and Behavioural Difficulty (now known as Emotional, Social and Mental Health Difficulty)	Difficulties getting on with other children Hyperactivity and concentration
2	13	M		Difficulties with concentration
3	12	F		Special educational needs Hyperactivity and concentration
4	13	F		Emotional difficulties associated with peer group interactions and parental interactions
5	13	F		Emotional difficulties Hyperactivity and concentration
6	13	M		Specific Learning Difficulty, such as dyslexia or dyspraxia queried. Emotional difficulties Hyperactivity and concentration
7	13	M		Young carer Emotional difficulties
8	13	M	Attention Deficit Hyperactivity Disorder	Hyperactivity and concentration Emotional difficulties

### 3.7.Ethics

#### 3.7.1.Consent process

The British Psychological Society (BPS) Code of Ethics and Conduct (2009) will be used as a guide to making ethical decisions for this study. Furthermore, Ethical Approval was obtained from the University of Birmingham's Ethical Review Board in March 2014. The SENCO supported those pupils who had expressed an interest in the study in fully accessing an information sheet and assent form explaining that participation was voluntary, that they had a right to withdraw at any time, that data would be anonymised and remain confidential and that participation would involve a debriefing session (see appendix 4 and 5). An oral description of the purpose of the study, what would be expected from participation and a further opportunity to confirm consent preceded the first information gathering sessions with pupils.

Parents and Form Tutors also received information sheets and consent forms (see appendix 4 and 5) outlining what would be expected from their participation, their right to withdraw, anonymity and confidentiality. Parents were asked to give consent for their child to participate and to contribute to the evaluation of the MBI in order to collect the necessary data.

#### 3.7.2.Protecting participants from harm

The researcher acknowledged that the students might experience some psychological discomfort, anxiety and/or stress due to mindfulness practice, particularly those that encouraged reflection and taking notice of thoughts, feelings and emotions. Emotions might be brought to the students' awareness that they may have been suppressing as a defence mechanism or they may not be psychologically stable enough at that time to explore thoughts and feelings safely. It was stressed to pupils that they could stop at any time during a session

if they felt uncomfortable/discomfort and that they were free to withdraw from the study at any time.

A risk management protocol was in place whereby the researcher and SENCO had a responsibility to safeguard the students from potential harm by monitoring and assessing pupil's responses to the intervention. The Special Educational Needs Co-ordinator known to those young people participating was responsible for monitoring participants outside of sessions and informing the researcher of any concerns which may have result in the student being advised by the researcher to withdraw from the research and steps made to help them access alternative support. After completing the MBI, if follow up support was needed they could access this from the SENCO (with support and advice from the link Educational Psychologist to the school). Parents also had the right to withdraw their child from the research at any time.

Table 7 outlines the steps the researcher took to prepare in delivering an MBI, such as relevant training, reading and personal mindfulness practice. Literature used in the design of the intervention is also summarised (see appendix 8 for a detailed intervention plan).

### 3.8. Designing the Mindfulness-Based Intervention

The intervention was developed using an eclectic mix of resources as it was felt that no one resource offered an appropriate and complete intervention that would meet the needs of the 12 and 13-year-old participants, which was exclusively mindfulness-based. The resource offered by Biegel (2009), for example, was worksheet-based, therefore, not all pupils may have been able to access the worksheets due to differing reading abilities and may not have been engaging enough. Biegel (2009) offered some useful explanations and analogies which were used to help explain the concept of mindfulness in a child-friendly way. The resource by

Greenland (2010) offered some very creative and concrete interpretations of mindfulness practices, but some practices appeared to be aimed at younger children; for example, children lying down for a breathing exercise with teddy bears on their tummies. Furthermore, Greenland (2010) placed a greater emphasis on kindness and compassion exercises which were represented to a lesser extent in the literature and was not included in the definition of mindfulness that the researcher had chose to adopt for this study. In addition, the decision to use specific resources aimed at teaching mindfulness to children and young people depended on them being readily available to the researcher; for example the resources used in the .b programme (Burnett et al, 2011) had a growing evidence base but could not be accessed as I had not attended the training for that programme.

Kabat-Zinn's (2013) suggested formal practices such as mindful movement and breathing practices were included. In addition, practices such as the Body Scan, 3-minute breathing space (3MBS) and mindful walking exercises were also included and were part of the researchers own Mindfulness-Based Stress Reduction training. These practices corresponded to Kabat-Zinn's definition and construct of mindfulness which was used as a guide in this research.

Practices were adapted for the participants by introducing scaffolding for language, such as crib sheets for describing words and memory aids such as step-by-step prompt cards for the 3MBS and coloured stickers as reminders to be mindful in everyday activities. Mindfulness was taught by creating activities to make concepts more concrete; for example, the drawing activity in session 4 (see appendix 8) was a visual kinaesthetic activity adapted from the resource by Greco and Hayes (2008) in order to practice looking or seeing with mindful awareness. Demonstrations, such as using a bottle of water with baking soda in it, was used to describe how emotions could cloud our minds and that resting in the breath let our emotions

settle (as the water settles) allowing the mind to become clear again. Guided imagery and visualisation was used to help the students access the practice aimed at noticing thoughts and feelings and learning to let them go, by utilising a practice offered by Hooker and Fodor (2008) which encouraged students to visualise each thought and feeling in bubbles, slowly rising up and away. Activities were also designed to be engaging and enjoyable; for example the invisible ball exercise was used to encourage attendance to movement and was accompanied by a more formal mindful movement practice (see appendix 8: week 3, session 6).

### 3.9. The researcher's insider perspective on the MBI

Robson (2002) defined insider research as research in which the researcher has a direct involvement or connection with the research setting. The dual roles as a researcher and practitioner delivering the MBI were considered in terms of possible impact this might have on the validity of the findings. Crotty (1998) argued that instead of uncovering an objective 'truth' which is impossible to reach, truth or meaning could be created by engaging with realities in our world from an insider perspective. Unluer (2012) also highlighted a number of advantages to insider research such as understanding formal and informal power structures, better access to participants and the advantage of knowing participants in facilitating interactions. In this study, the researcher wanted to obtain an insider perspective on the power relationships that existed within the school system and to have the opportunity to get to know the participants to facilitate the semi-structured interview conducted post-intervention. Unluer (2012) also suggested that the researcher was able to offer an informed perspective derived from the in-depth knowledge gained from positioning the self as an insider. In this study the researcher aimed to achieve a valid representation of the complexity of MBI's delivered in

real-world settings and so an insider perspective helped to develop this in depth view of the reality of an MBI delivered in a school setting.

It was important to also have a critical view of my position as a researcher. An insider position was a challenge to the validity of the study due to the subjective nature of researching one's own practice, having a vested interest in certain results being achieved and difficulties viewing the data objectively. These potential researcher biases were minimised by conducting research in a rigorous and systematic manner as suggested by Hammersley and Gomm (1997).

The decision was made to minimise researcher bias by using a variety of systematic data collection methods which tended to generate more quantitative data. The data from the semi-structured interviews was also analysed in a systematic way, using thematic analysis. The use of systematic methods minimised the extent to which the data could be distorted by the researcher by reducing the degree to which the researcher inferred subjective meaning from the data. In addition, the use of triangulation in capturing multiple perspectives also helped to minimise researcher bias.

A systematic approach to data analysis was also adopted to allow readers to construct their own perspectives which are equally as valid as the researchers, as suggested by Cohen et al (2000). The decision to minimise the degree of interpretation made by the researcher, arguably, limited the extent to which the researcher could be reflective within the role as the practitioner delivering the MBI.

Table 7: Outline of researcher activities

Activity and timescale	Description of activities undertaken	Outcomes
<p><b>March 2013</b></p> <p>Preparation to design and deliver the intervention</p>	<ul style="list-style-type: none"> <li>• Extensive reading of introductory books and articles on mindfulness; for example, Williams and Penman (2011)</li> <li>• practice mindfulness in short 15 to 20 minute sessions on a daily basis over 6-8 months</li> <li>• completed a Mindfulness-Based Stress Reduction course over 4 full days (not the conventional 8 weeks) (October 2013)</li> </ul>	<ul style="list-style-type: none"> <li>• Gained experiential experience of mindfulness.</li> <li>• Developed knowledge base</li> </ul>
<p><b>August 2013</b></p>	<ul style="list-style-type: none"> <li>• Work on literature review began.</li> </ul>	<ul style="list-style-type: none"> <li>• Aim of study identified- decided to evaluate a mindfulness intervention delivered in a school setting</li> </ul>
<p><b>October 2013</b></p> <p>Piloting</p>	<ul style="list-style-type: none"> <li>• Researcher helped to facilitate a number of mindfulness sessions with an Educational Psychologist and colleague, which were delivered to a Year 5 class at a Behaviour, Emotional and Social Difficulties provision</li> <li>• Delivered short sessions on Mindful Breathing (adapted from Greenland, 2010) to a number of Year 6 classes from across the County, who attended a day focusing on wellbeing</li> <li>• I used a few mindfulness practices and ideas in a therapeutic intervention for two year 8 students attending a specialist provision for pupils with special educational needs</li> </ul>	<ul style="list-style-type: none"> <li>• Feedback on success (or not) of adaptations to mindfulness practices when applied in real life context.</li> </ul>

<p><b>November 2013</b></p> <p>Research proposal</p>	<ul style="list-style-type: none"> <li>• Research proposal shared with tutor, supervisor and Principle Educational Psychologist of Educational Psychology Service in East Midlands.</li> </ul>	<ul style="list-style-type: none"> <li>• Proposal agreed</li> </ul>
<p><b>February 2014</b></p> <p>School identified and invited to participate in research</p>	<p>Meeting with stakeholder, Special Educational Needs Coordinator of the school to provide additional information on the study.</p> <ul style="list-style-type: none"> <li>• Application for Ethical Review submitted to University of Birmingham’s ethical committee.</li> </ul>	<ul style="list-style-type: none"> <li>• SENCO acquired permission from Assistant Head and Head teacher for study to go ahead.</li> </ul>
<p><b>March 2014</b></p> <p>Intervention design and research methods and tools developed.</p>	<ul style="list-style-type: none"> <li>• Activities were adapted from a variety of available sources such as Hooker and Fodor (2008), Greenland (2010), Snel (2014), Greco and Hayes (2008) and Biegel (2009).</li> <li>• Researcher’s previous experience delivering therapeutic interventions to the age group and developmental needs of the participants. The researcher’s knowledge, skills and experience as a Trainee Educational Psychologist used to tailor activities to the age group.</li> <li>• Mixed methods identified as research approach- developed observation schedule, semi-structured interview schedule, and chose other tools of measurements, such as SDQ.</li> </ul>	<ul style="list-style-type: none"> <li>• To support students’ memories for practicing outside of sessions and encouraged to write homework down in their mindfulness logs at the end of each session and given other prompts when needed; for example, students wrote out the steps of the three minute breathing space on a small piece of card.</li> <li>• To help describe bodily sensations students were given a crib sheet of suggested words.</li> <li>• Visual aids provided; for example, pictures of visual illusions to explain how we shift our attention towards things, thereby</li> </ul>

		<p>changing our experience of them and students were introduced to guided imagery in the latter stages of the MBI to make the practice of ‘letting go’ more visual and less abstract.</p> <ul style="list-style-type: none"> <li>• A number of approaches were utilised to adapt the Mindful Movement practice for this age group to maintain their interest, such as a ‘walking on eggshells’ activity.</li> </ul>
<p>April 2014</p> <p>Invited parents and teachers to introductory session</p> <p>Participants selected</p>	<ul style="list-style-type: none"> <li>• Parents and teachers were invited to an introductory session (see section for PowerPoint slides) prior to the onset of the programme (see appendix 7).</li> <li>• Parents were invited by letter a week before the session (consent had already been given at this point) (see appendix 6).</li> <li>• The school SENCO invited members of staff who were participating in data generation to introductory session.</li> <li>• Participants selected, consent and information forms sent out to students, teachers and parents</li> </ul>	<ul style="list-style-type: none"> <li>• The idea to hold an introductory session was initially met with reluctance by the member of school staff I was liaising with. The member of school staff also failed to inform me that the time slot clashed with Departmental meetings. No school staff attended.</li> <li>• No parents attended</li> <li>• Session provided opportunity to introduce mindfulness in greater depth to Teaching Assistant who would be attending sessions</li> </ul>
<p>May 2014</p> <p>Pre-intervention</p>	<ul style="list-style-type: none"> <li>• Pre-intervention observations and questionnaires.</li> <li>• Met with students prior to start of intervention to provide additional information and to check that</li> </ul>	

data collection	informed consent was given.	
June 2014  Delivery of intervention (11 weeks)	<ul style="list-style-type: none"> <li>• Intervention delivered in twice weekly sessions for 6 weeks.</li> <li>• Data collection from participants and Teaching Assistant to provide feedback aspects of the sessions.</li> </ul>	
July 2014  Post-intervention data collection	<ul style="list-style-type: none"> <li>• Post-intervention observations, questionnaires and semi-structured interviews.</li> </ul>	

## CHAPTER 4

### FINDINGS

This chapter integrated qualitative and quantitative data in a meaningful way, so that links could be made between the data and the research questions and theoretical propositions. Illustrative examples of themes taken from semi-structured interviews with students were used throughout to represent their views, providing explanatory and exploratory data to support conclusions drawn from quantitative methods (see appendix 9 for an example of the thematic analysis process). The chapter begins with an examination of evidence for the benefits of MBI's and then moves on to explore data associated with process variables that the researcher infers are important for the successful delivery of an MBI. The themes that emerged from semi-structured interviews and representative of the student's experience of MBI's helped to illuminate hoped for outcomes, as well as challenges for the students. Wherever possible Group A and B data sets are compared, to apply replication logic, and the chapter concluded with an in depth exploration of four participant's outcomes and experiences, comparing and contrasting these units of analysis in order to illuminate possible underlying reasons behind individual variation in outcomes.

4.1. Research Question 1: In what ways might MBIs be beneficial (or not) to students?

4.1.2. Theoretical proposition: The MBI will be associated with improved mindfulness.

#### *Child and Adolescent Mindfulness Measure*

The overall median score for the 8 participants was 19 points pre-intervention and increased to 21 points post-intervention. Group A participants 1 and 4 experienced an increase in

mindfulness, in contrast to participant 2's scores which unexpectedly decreased. Participant 5's levels of mindfulness did not change. A greater number of Group B participants experienced an increase in mindfulness, with three participants out of four experiencing positive change. Participant 8's levels did not change (see tables 8a and b).

A comparison of scores for Group A and B would suggest that the most improvement to mindfulness was observed in Group B participants. The median of Group A's scores are influenced by participant 2's drop by 12 points. If participant 2's results were excluded from analysis on the basis that the scores were erroneous for a reason unknown to the researcher, Group A's median pre-intervention score would be 19 and median post-intervention score would be 21. With the omission of participant 2 scores, the pattern of positive change in Group A would be similar to the pattern observed in Group B. Alternatively, participant 2's scores might be treated as the exception, challenging the theory that MBI's increase mindfulness and in fact in this case may have reduced his levels of mindfulness, challenging the researchers propositions. There may be other valid reasons for his apparent drop in mindfulness; for example, it could indicate a methodological weakness of the CAMM. Furthermore, there may have been a reason for the drop associated with a contextual factor, with a drop indicating that participant 2 was experiencing some negative event in his life, which had the effect of making him less mindful.

*Table 8a: Group A participants pre- and post-intervention scores on the Child and Adolescent Mindfulness Measure*

Group A Participants	Pre-intervention CAMM scores	Post-intervention CAMM scores	Difference between pre- and post intervention scores
1	23	29	+6
2	22	10	-12
4	19	21	+2
5	15	15	0
median	20.5	18	

*Table 8b: Group B participants pre- and post-intervention scores on the Child and Adolescent Mindfulness Measure*

Group B participants	Pre-intervention CAMM scores	Post-intervention CAMM scores	Difference between pre- and post intervention scores
3	18	27	+9
6	28	31	+3
7	8	19	+11
8	19	19	0
median	18.5	23	

*CAMM: statistical analysis*

In order to test the assumption that MBI's would improve the mindfulness of students using statistical analysis, the Wilcoxon Matched-Pairs Signed-Ranked Test (abbreviated to The Wilcoxon Test) was run using data from all 8 participants to increase the overall sample size, and therefore reliability of findings.

A stem plot was utilised as an informal test for outliers prior to running the test as the Wilcoxon assumes that the data is normally distributed, and violating that assumption would threaten the validity of the test. A test for skewness, calculated using the SPSS software, indicated that participant 2's difference in scores of -12 was an extreme value in the data set, with a skewness of data set calculated as -1.087; lower than the acceptable cut of point of -1.

Taking out this outlier improved the normality of the distribution of differences to 0.544, a skew closer to 0 and less than 1. Participant 2's score was therefore omitted from the statistical analysis and treated as an outlier.

A Wilcoxon Matched-Pairs Signed-Ranks test indicated that for the seven remaining participants the Mindfulness-Based Intervention (MBI) there was a significant increase in the mindfulness of participants ( $z = -2.023$ ,  $p = 0.0215$ , one-tailed). The effect size, an indication of the size of the differences, was calculated as  $r = -0.54$  which according to Rosenthal's (1996) effect size thresholds, would be considered a 'medium' effect size.

The results of the statistical analysis suggest that the 7 participants experienced a significant increase in mindfulness from pre-intervention levels to post-intervention levels. As discussed in the previous section P2's scores should not be overlooked but explored further. Further analysis is offered towards the end of this chapter.

#### *Semi-structured interview data*

Emerging themes from the analysis of the post-intervention interview data from students suggested that the students had noticed changes to their experience of the present and to cognitive processes, perhaps associated with an increase in mindfulness as suggested by the literature. This is further evidence that the MBI was associated with an increase in mindfulness.

Four students reported a greater awareness of their environment or self-awareness (see appendix 10 for additional illustrative examples):

P1: I've been concentrating like a lot more on stuff that's been going on around me.

P3: Well I've learnt to actually notice a lot more details on things.

The following examples are used to illustrate the themes that emerged from responses to the question 'What does being mindful mean to you?'

Responses indicated the students understanding of mindfulness and what it meant to them. Three students referred to improved awareness of themselves and their environment. Two student responses referred to being in the present:

P1: Erm being able to um think about what's going on now and not what's going to happen later

P3: Like not just sitting in your head... just thinking on like what I'm actually doing not what could be happening elsewhere

4.1.3. Theoretical proposition: The MBI will help reduce difficulties experienced by students and perceived by parents and teachers

#### *Child and Adolescent Strengths and Difficulties Questionnaire*

The students, parents and form tutors pre- and post-intervention scores on the SDQ indicated that in most cases there had been a decrease in the Total Difficulties score (see table 9 for participant's scores). The Total Difficulties scores obtained from the self-checklist, parents and Form Tutors for Group A members, participants 4 and 5, all decreased. Patterns in the change in scores for participants 1 and 2 were less consistent; student and parent scores decreased for participant 1 but form tutor scores indicated no change, participant 2's scores indicated a decrease in form tutor scores but an increase in student scores. Post-intervention parental scores for participant 2 were unable to be obtained despite the researchers efforts, making this data set incomplete. Participant 2's scores suggest he experienced an increase in perceived difficulty which is further evidence for the assertion in the previous section that a change in the context outside of the MBI may have lead to an increase in difficulty. This is also evidence for the alternative explanation to the researcher's theoretical propositions, that the difficulties experienced by participant 2 were not improved by the MBI.

Group B's scores also indicate both convergent and divergent scores. Parental Total Difficulties scores for participants 3, 6, 7 and 8 all decreased. Interestingly, participant 6's total difficulties score from the self-checklist increased by one point, but scores from both his mother and form tutor decreased by 8 and 12 respectively; the two largest decreases found, when compared to scores from the other 7 participants. These decreases correlated with anecdotal reports from members of staff who knew participant 2 best, of improvements to participant 2's learning and wellbeing. Scores from participant 7's form tutor indicated a large increase in difficulty which will be explored in greater depth during comparison of individual participant's scores in section 4.4. Scores indicating increased difficulty or no change in difficulty, as seen for participants 6, 7 and 8 challenged the researcher to consider the rival proposition, as total difficulty scores did not uniformly decrease across the two groups. The lack of uniformity that was replicated across the two groups suggested that if the study was repeated one would expect to see a similar patterns of results.

*Table 9: the participants scores obtained on the Child and Adolescent Strengths and Difficulties Questionnaire.*

Group	Participants	Total Difficulties scores		Difference between pre- and post-intervention scores
		Pre-intervention	Post-intervention	
A	Student 1	14	11	-3
	Parent 1	21	17	-4
	Form Tutor 1	0	0	0
	Student 2	13	15	+2
	Parent 2	15	-	-

	Form Tutor 2	10	7	-3
	Student 4	17	15	-2
	Parent 4	20	16	-4
	Form Tutor 4	9	4	-5
	Student 5	25	23	-2
	Parent 5	21	18	-3
	Form Tutor 5	10	6	-4
B	Student 3	10	9	-1
	Parent 3	13	9	-4
	Form Tutor 3	10	8	-2
	Student 6	11	12	+1
	Parent 6	18	10	-8
	Form Tutor 6	20	8	-12
	Student 7	25	25	0
	Parent 7	15	12	-3
	Form Tutor 7	10	23	+13
	Student 8	16	12	-4
	Parent 8	22	16	-6
	Form Tutor 8	10	10	0

*SDQ Impact Supplement*

When parents were asked to rate the impact of difficulties on their child in a question on the SDQ impact supplement, most parental ratings decreased (5 out of 8) indicating difficulties were having less of an impact when compared to the degree of impact at the pre-intervention stage (see table 10). There were twice as many occurrences of decreased scores in Group A when compared to Group B, suggesting that the MBI may have been more successful at reducing the severity of difficulties for Group A than Group B. In Group B it was more common for there to be divergence in the degree to which scores changed; for example, a decrease in the scores of one respondent but not change or increase in scores for the other respondent in the data set for each student.

*Table 10: a table representing impact scores on the SDQ for perceived difficulties: 0 = no difficulties, 1 = minor difficulties, 2 = definite difficulties, 3 = severe difficulties, Green = negative change in score, Red = positive change in score.*

Group	ID	pre-intervention			post-intervention		
		student	parent	teacher	student	parent	teacher
<b>A</b>	<b>1</b>	2	2	1	1	1	0
	<b>2</b>	1	2	2	1		2
	<b>4</b>	2	2	0	1	1	1
	<b>5</b>	3	2	1	0	1	0
<b>B</b>	<b>3</b>	0	1	1	0	1	0
	<b>6</b>	0	3	2	0	0	2
	<b>7</b>	2	2	1	3	0	3
	<b>8</b>	2	1	2	1	1	2

### *Statistical analysis*

As with statistical analysis of CAMM data, Group A and B data sets were combined to strengthen the validity of findings from statistical analysis, by increasing the sample size.

A Kruskal-Wallis One-Way Between-Subjects test was used to analyse the differences between the scores given by groups of respondents (student, parent, Form Tutor) at the pre-intervention stage. A significant difference was found between the Total Difficulties (TD) scores given by groups of respondents on the SDQ pre-intervention ( $\chi^2 = 10.456$ ,  $df = 2$ ,  $p = 0.005$  or  $p < 0.05$ ). Parent scores tended to be higher, with a median of 20.0, compared to students scores (median = 15.0) and form tutor scores (median = 10.0).

### *Student and Form Tutor TD scores*

The Wilcoxon Matched-Pairs Signed-Ranks test indicated that there was no significant difference between the scores obtained by students on the Strength and Difficulties Questionnaire pre- and post-intervention ( $z = -1.450$ ,  $p = 0.085$ , one-tailed). Median scores were 15.0 pre-intervention and 13.5 post-intervention.

A possible outlier was identified in the form tutors scores for student number 7, but a box plot of the difference in Form Tutor scores on the SDQ indicated that it was not an outlier and so all values were included in the Wilcoxon test. The test showed that there was no significant change in Form Tutor's scores ( $z = -1.140$ ,  $p = 0.155$ , one-tailed). Median scores were 10.0 pre-intervention and 8.0 post-intervention.

The findings from the Wilcoxon test for student scores and form tutor scores suggested that the pre- and post-intervention differences in SDQ scores did not represent a real difference as one would see a similar pattern of differences purely by chance. The researcher, therefore, had

to consider the possibility that the MBI was not associated with a decrease in difficulties that was not due to chance alone.

#### *Parent scores*

A Wilcoxon Matched-Pairs Signed-Ranks test indicated that the Mindfulness-Based Intervention (MBI) elicited a significant change in the SDQ scores obtained by parents pre- and post intervention ( $z = -2.388$ ,  $p = 0.0085$ , one-tailed). Median mindfulness scores were 20.0 pre-intervention and 16.0 post-intervention.

This finding suggested a real difference in difficulties as perceived by parents, which was partial evidence for the proposition that the MBI was associated with a decrease in difficulties.

#### *Semi-structured Interviews*

Themes emerged from the thematic analysis of transcripts from students, which provided evidence to suggest that the MBI helped them develop skills they could use to positively manage their difficulties and that mindfulness practice was associated with feeling calmer and more relaxed.

Theme: Mindfulness for a specific purpose

5 Students gave examples of how they had used Mindfulness for a specific purpose. They often gave examples of how mindfulness had been used as a method for calming down when they were experiencing stress or frustration (see appendix 10 for more examples):

P1: Erm I enjoyed the like three minute breathing exercise 'cause when I was like getting stressed and everything it helped me calm down and stuff.

When asked in what way mindfulness had been helpful, P1 responded, ‘Like calming me down when I get angry at Fifa and everything!’

P4’s comments to this question suggested that practising mindfulness had brought her a greater sense of peace and wellbeing:

P4: It means like finding a way of bringing like your peacefulness out so you don’t get too...like you’re not always relaxed and you’re not always over thinking everything

Theme: Calming and relaxing

Seven students reported that they benefitted from the calming and relaxing effects of mindfulness practices. Six of the seven reports of the calming and relaxing benefits of mindfulness were related to the effects of a particular practice. Below, are examples of responses to the question ‘Which activities did you enjoy the most and why?’ :

P7: I think Mindful Breathing because it relaxed me much more than the other ones.

P8: Erm I enjoyed the breathing one -the three minutes breathing one because it taught me a way of how to calm myself down and relax.

4.1.4. Theoretical proposition: MBIs are associated with improved attention and learning

*Pre- and post-intervention observational data*

There was wide variability between the scores for participants and no overall trend could be identified from a surface level analysis of the Cognitive Abilities Profile (CAP) scores or scores on the structured on/off task observation. There appeared to be more improvements to CAP scores for participants’ attention and behaviour for learning in Group A compared to

Group B. Peer interactions appeared to be the primary distraction for participants in lessons (noted in seven out of eight cases).

There were contextual factors which may have confounded the researcher's findings; the post-intervention observation was carried out towards the end of the academic year, after end of year exams and it was observed that the student body as a whole appeared visibly more restless and distracted in general. In addition, the participants were observed in different lessons; for example, the researcher carried out a pre-intervention of participant 5 in a Maths lesson, followed by a post-intervention observation in a Geography lesson. These uncontrolled for variables may explain why scores for some of the participants decreased.

A table representing pre- and post intervention scores on the CAP can be found in appendix 11. Field notes were also taken to indicate how scores were obtained.

### *Semi-structured interviews*

Theme: Improved concentration

Students' responses to questions suggested that they had noticed changes within the cognitive domain (six students). Most responses in this theme referred to being able to concentrate or focus more:

Researcher: Have you noticed any changes at school since completing the MBI?

P3: Yeah it seems like now I actually focus more in lessons and things

Researcher: Do you think mindfulness activities have been helpful and in what way?

P7: Erm definitely in lessons because I can zone back in to what the teacher is saying or somebody else is saying

These reports suggested that the students had noticed some subtle changes at school, which may not have been visible to an observer.

*Strength and Difficulties Questionnaire (SDQ): Impact supplement*

The question on the impact supplement of the SDQ ‘Do the difficulties interfere with [the student’s] everyday life in the following areas..?’ included responses to the area of ‘classroom learning’. Pre and Post intervention responses to this question were obtained from all but one participant (parent of participant 2 post-intervention response was not obtained).

Respondents who indicated ‘Not at all’ and ‘Only a little’ scored 0 points, ‘Quite a lot’ scored 1 point and ‘A great deal’ scored 2 points. Pre and post responses could be compared to indicate degree of change in this area with 0 difference indicating no change, positive values indicating an increase in difficulties interfering with classroom learning and negative values indicating a decrease in interference (see table 11).

Table 11: the change in classroom learning impact scores.

		Pre- and post-intervention difference in classroom learning impact scores		
Group	Participant	Parent	Student	Form Tutor
A	1	0	0	0
	2	N*	+1	0
	4	0	-1	+1
	5	-1	-1	0
B	3	0	0	0
	6	-1	0	-1
	7	-1	+1	+1
	8	-1	0	0

*\*post-intervention score not obtained*

In seven cases scores decreased by 1 point, in four cases scores increased by 1 point and in the majority of cases (12) scores stayed the same. Parent scores for 50% of participants (5, 6, 7, 8) decreased by 1. Two out of three respondents reported a decrease of 1 point for Participants 5 (parent and student scores decreased by 1) and 6 (parent and form tutor scores decreased by 1). Differences in scores between respondents conflicted for participants 4 and 7; for example, participant 4's score decreased by 1 but the Form Tutors score increased by 1.

In conclusion, there was a considerable degree of variability in this data. Reports from the students in post-intervention interviews indicated that pupils perceived the MBI to be of benefit in some cognitive domains, such as concentration and attention and made direct references to the impact of mindfulness on classroom learning, which is consistent with the literature. Parents reported less impact of difficulties post-intervention on classroom learning than Form Tutors. Observational data indicated no overall patterns of impact and observations

were likely to be heavily influenced by contextual differences in pre and post intervention, which will be explored further in the 'Discussion' section of this thesis.

### *Semi-structured interviews*

Theme: Degree of change

Students who commented on the degree of change they had perceived reported a small degree or no change since completing the intervention. These comments are likely to reflect the degree of change the students had noticed and were therefore consciously aware of:

Researcher: Have you noticed any changes at school since completing the course?

P2: Er a tiny bit.

P7: No

Researcher: Have you noticed any differences in the way you think since completing this mindfulness course?

P5: Well I haven't really noticed anyth- not that much.

Comments organised under this theme are considered as evidence for the rival proposition that this MBI did not result in benefits for the students. Alternative explanations for these comments would include the students not being consciously aware of changes that had taken place or that the SDQ and CAMM are more reliable measures as they are more sensitive to change than the students own perceptions. Furthermore, comments made in response to other questions do suggest that the students experienced hoped for outcomes.

#### 4.2. Research Question 2: What processes influenced the outcomes of this MBI?

Theoretical proposition: the benefits of the MBI were dependent on a number of contextual factors which are embedded within the MBI, such as successful group delivery, therapist rapport with the groups and the student's active participation in the intervention measured by good attendance, engagement with practice and viewing the skills learnt within the MBI as important to them, and appropriateness of the session for the age and developmental level of the students.

##### *Child Group Session Rating Scales (CGSRS)*

Student median ratings on the CGSRS indicated that high ratings were replicated across both groups, with median ratings of 8.0 or above suggesting that the students felt listened to by the group leader and group members, that they felt the sessions were important and that they liked what they did in the sessions (see table 12). 'Overall' ratings for sessions, when taken as a whole, were also high across the groups with a median rating for Group A of 9.1 and Group B of 8.95. Group A ratings were relatively lower than Group B's median rating for the extent they felt listened to and the median rating for what they did in the sessions.

*Table 12: median CGSRS ratings for Group A and Group B*

	Median ratings			
	Listening	How important	What we did	Overall
Group A	8.0	8.95	8.45	9.1
Group B	9.4	9.05	9.1	8.95

*Weekly Evaluation Form: Teaching Assistant's Perceptions*

Median scores out of 5 across the domains of student enjoyment, student engagement, perceived benefit to students, group cohesion, age-appropriate content and language and leader-student interaction offered an alternative perspective of the sessions from the view point of the Teaching Assistant who helped facilitate the sessions.

*Table 13: Teaching Assistants' median ratings for each group*

	Median ratings	
	Group A	Group B
Age-appropriate content	5	5
Age-appropriate language	5	5
Student engagement	5	4
Student enjoyment	5	4
Perceived benefit	4	4
Group cohesion	5	3
Leader-student interaction	5	5

The Teaching Assistant's (TA's) median ratings were largely consistent and relatively high (between 4 at 5), with the exception of the median rating for Group B's Group Cohesion of 3 (see table 13). These findings would suggest that the researcher was successful in creating factors in an MBI needed for successful delivery of an intervention as high ratings were largely replicated across the two groups.

When the TA's scores are compared to the CGSRS, there are subtle differences in ratings.

One might expect the ratings for Group A given by the TA to be lower for group cohesion as Group A's CGSRS median rating for the extent to which they felt listened to by the group

leader and group members was lower than Group B’s ratings. The TA’s ratings for group cohesion were lower for group B and so it was expected this would be reflected in student ratings for the extent they felt listened to. The researchers own observations during sessions indicated that Group A was more cohesive and appeared to listen to each other to a greater extent.

*Attendance*

The average attendance for the 11 intervention sessions was 82.6%, with a rate of attrition of 0%. Group A’s average attendance was 7.7% higher at 86.5%, when compared to Group B’s attendance which was 78.8% across the 11 sessions (see table 14). Group B’s lower attendance may reflect differences in general school attendance between the groups (i.e. group members were not in school so did not attend the session), or indicate that they may have enjoyed or engaged with the MBI to a lesser extent so were less likely to attend. It is also possible that for those members whose attendance was lower, the number of sessions they missed may have impacted on their frequency of mindfulness practice and their mindfulness learning outcomes.

*Table 14: attendance data for each student in Group A and B and group averages across the eleven sessions:*

Participant	Group A attendance (%)	Group B attendance (%)
1	100.0	
2	64.0	
3		82.0
4	82.0	
5	100.0	
6		73.0
7		64.0
8		96.0
Average attendance	86.5	78.8

#### 4.3. Exploring Research Questions 2 and 3 with data obtained from semi-structured interviews

An analysis of student comments illuminated potential process factors that influenced student outcomes, in addition to providing a description of students' experiences of the MBI (see table 15 for further details of thematic analysis).

Comments relating to formal practices:

A number of student comments referred to practices and skills learnt within the sessions which were either associated with desirable outcomes, from the student's perspectives, or not considered as useful or beneficial.

The students comments organised under the theme of 'Calming and relaxing' were often with reference to the calming and relaxing effects of specific mindfulness practices, therefore, illuminating some of the processes linked to the benefits of MBI's. A number of students made reference to the calming and relaxing benefits of breathing practices, such as mindful breathing and the three-minute breathing space. Here is an example of such a comment:

P8: Erm I enjoyed the breathing one -the three minutes breathing one because it taught me a way of how to calm myself down and relax

These comments suggest that breathing practices were perceived as more beneficial to the students as they lead to desirable outcomes for them.

There was more variability in comments the question about what the students did not enjoy.

Not all students mentioned a specific practice when asked, although, two students mentioned that they thought that the Body Scan was too long:

P6: Erm the scan I did not like because it took too much time!... and it was a bit boring

Although the students may have found longer practices more challenging and less enjoyable, there was not enough evidence to explore whether, although the practice was less enjoyable, they were not as beneficial. It appeared that student's were less likely to attribute desirable outcomes to the Body Scan, when compared to breathing practices.

Some students reported feelings self-consciousness during mindfulness practice in the group. The researcher/group leader had picked up on these feelings in the session and got the students to turn their chairs round so that they were facing outwards, which had seemed to help reduce feelings of self-consciousness at the time. The student's comments suggested that in spite of attempts to address this issue, these feelings were still associated with formal mindfulness practice:

P2: Probably the closing our eyes part where we were like breathing because it made me feel uncon..unconscious? ...erm like..erm...not.. I didn't like it because... Yeah it was awkward because I thought someone was staring at me and it felt weird...

An analysis of P2's outcomes would suggest the MBI was less beneficial for him and his attendance was lower. Feelings of awkwardness and self-consciousness during formal practice may have affected P2's engagement and enjoyment of the sessions, and frequency of formal practice outside of the sessions. These feelings were only mentioned by 2 of the 8 students which suggested the majority of students did not have these feelings, or that it did not affect their enjoyment of the sessions. An analysis of P2's outcomes and experiences will be discussed in more detail in the next section.

Comments relating to understanding the purpose of formal mindfulness practices:

Some student's reported that they did not understand the purpose of some of the practices; for example, the mindful walking practice:

P3: The walking one because I didn't understand it!... I didn't understand how it was meant to work

These comments may be linked to the way the practices were taught and how the purpose of the practice was communicated to the students by the researcher/group leader. In addition, the comments may be evidence for those practices not being appropriately differentiated or adapted for the age and cognitive capabilities of the students. It is also possible that the students were more able to understand how a practice was 'meant to work' if they experienced immediate positive benefits during and following the practice, such as feelings of calm and relaxation, which they were then likely to attribute to the practice.

Comments relating to practising mindfulness outside of the sessions:

Students gave reasons for not practising mindfulness, with comments often relating to a perception of a lack of time to practice. The frequency of students' practice also appeared to be linked to their perceived need to practice; for example, they might practice mindfulness for a specific purpose, such as when they felt stressed. P5's comments illustrate how they did not feel mindfulness was important enough to practice daily and that she was more likely to practice it if stressed or if she wasn't doing anything else. P7's comment suggested that lack of time might get in the way of practising:

P5: I think it's kind of in the middle of important and not important like slap bang in the middle because it's not as important that I need to do it every day like and it's not like not important that I don't do it. It's like quite important like sometimes if I'm stressed or if I'm just bored and I can't do anything then I'll do it.

P7: Not having enough time

These comments reflect possible barriers to the students continuing to practice mindfulness daily and indicate that most students would not have practiced mindfulness daily during the 6

week intervention. Student's frequency of practice is likely to have affected the students' gains in levels of mindfulness and other outcomes identified in the literature.

Comments relating to the group format:

Two students, P7 and P8; both members of Group B, reported that they had experienced feelings of frustration and annoyance in relation to the behaviour of the group in sessions; for example,

P7: Erm I think when everyone else listened it was alright but sometimes it got a bit tedious... And a bit frustrating

This is further evidence for the researcher's reflections and Teaching Assistant's feedback that some of the students in the group were occasionally unhappy with the behaviour of the group. This was likely to have affected group cohesion and the extent to which those students felt listened to by the group leader and the group members. This could have potentially negatively influenced group outcomes.

Comments relating to conversations with others about the MBI:

Comments relating to conversations the students had had with others (all those not attending the sessions) indicated who was interested in the students experiences of it, such as parents, the support they received from others and reflected the ability of the students to communicate what mindfulness was and what they did in the sessions.

An analysis of student's comments suggested that some students experienced difficulties communicating about the MBI to others, such as parents, school staff members and peers, and that the scope of these conversations was limited, for example:

P2: Er sometimes er with my mates er who I hang around with a lot, um I go like “Oh yeah I’m doing this mindfulness thing” and they’re like “oh yeah what’s that?” and it’s like “oh er we concentrate on our mi- on our mind obviously and all that”

These difficulties could have been minimised if parents and Form Tutors had attended the introductory session they were invited to at the start of the process. The conversations may have reflected the relatively low level of integration of the MBI with the home and school systems. An analysis of student’s comments suggested that some students appeared to receive a greater level of support of the MBI, when compared to other students. The researcher was most aware of the support P6 received from his Teaching Assistant as she regularly asked the researcher about the MBI; for example, what the homework was, and when the sessions were. P6’s comments about these conversations suggested the Teaching Assistants active involvement:

P6: I don’t talk about it. They [school staff members] talk to me

The potential effects of this involvement will be discussed in the next session.

Table 15: a summary of themes used to address research question 2 and associated propositions

Super-ordinate theme	Theme (derived from inductive analysis)	Illustrative examples	Number of respondents	Research question and theoretical proposition theme relates to (deductive analysis)
Benefits and uses of practising mindfulness	Calming and relaxing	<p>P8: Erm I enjoyed the breathing one -the three minutes breathing one because it taught me a way of how to calm myself down and relax</p> <p>P7: I think mindful breathing because it relaxed me much more than the other ones.</p>	7	Calming and relaxing are positive feelings that benefit wellbeing. Illustrative examples suggest benefits linked to specific mindfulness practices which incorporate awareness of the breath.
	Attending to longer practices	<p>P5: Probably the body scan because it made my legs ache... And also erm it was quite difficult to be honest, like because we did it quite slowly um my mind like started drifting of and I just started imagining about stuff I don't even need and then..</p> <p>P6: Erm the scan I did not like because it took too much time!... and it was a bit boring</p>	2	A few participants described experiencing difficulty attending to longer practices. Illustrative examples were obtained from answers to the question, 'Which activities did you enjoy the least and why?', suggesting that there were aspects of the MBI that they did not find enjoyable. Enjoyment of practices was a process variable considered by the researcher as important for successful outcomes.
Challenges to practising mindfulness	Feeling self-	P2: Probably the closing our eyes part where we were like breathing because it made me feel uncon..unconscious?	2	

	conscious	...erm like..erm...not.. I didn't like it because... Yeah it was awkward because I thought someone was staring at me and it felt weird...		
	Understanding the purpose of some practices	P3: The walking one because I didn't understand it!... I didn't understand how it was meant to work  P2: probably the mindful walking because it doesn't really work and I didn't really like that one	2	P2's comment linked to enjoyment of mindfulness practice.
	Group format	P7: Erm I think when everyone else listened it was alright but sometimes it got a bit tedious... And a bit frustrating	2	P7 and P8 were both members of the same group and experienced frustrations associated with aspects of the group, reflecting Teacher Assistant ratings for the cohesiveness of Group B.
Conversations with others about MBI	Conversations with school staff about the MBI	P5: She [Tutor] like erm when I go into registration she like reminded me to do my mindfulness homework because she probably knows I had some set and I'll quickly write it on my hand and go 'yeah I'll do it'  P6: I don't talk about it. They [school staff members] talk to me	2	Students appeared to experience differing levels of interest and involvement from members in school systems. Reports from students suggested that conversations with others tended to be brief and pragmatic; for example, reminders about homework.

	<p>Conversations with family members about the MBI</p>	<p>P1: My mum like has a look through the practice log and everything to see what's going on... But I don't really talk to her about it really</p> <p>P2: Well yeah I've been talking to my mum and dad erm and I described to them they still don't get it</p>		
	<p>Conversations with peers about the MBI</p>	<p>P2: Er sometimes er with my mates er who I hang around with a lot, um I go like "Oh yeah I'm doing this mindfulness thing" and they're like "oh yeah what's that?" and it's like "oh er we concentrate on our mi- on our mind obviously and all that"</p> <p>P6: And I said it is just to be more aware of what you are doing and think.</p> <p>P7: They've asked but I've not really explained it cos its quite difficult to explain... But now it's over I might talk to them a little bit more so they know what it's about so they can understand.</p>		

Daily practice	Importance of daily practice	<p>P4: Its-I think...I don't do it every day but I think when I can and when I really think I need to do it.</p> <p>P5: I think it's kind of in the middle of important and not important like slap bang in the middle because it's not as important that I need to do it every day like and it's not like not important that I don't do it. It's like quite important like sometimes if I'm stressed or if I'm just bored and I can't do anything then I'll do it.</p> <p>P2: it is fairly important to me [to practice mindfulness daily] so I -cause my parents are always saying to me 'oh you need to concentrate on your work...'</p>	8- respon ses to questio n, 'How import ant is it to practic e mindfu lness every day?'	The majority of students commented that it was fairly important or 'quite important' to practice daily (six students). P4's response indicated that she practiced when she could and when she thought she needed to do it. This corresponds with the theme of mindfulness for a specific purpose. P5's comments also corresponded with the theme of mindfulness for a specific purpose and time to practice when they were most likely to practice.
	Time for daily practice	<p>P1: like em having lots going on at the same time.</p> <p>P2: Er it depends really, probably when I get into year 9 it will probably be coursework and everything.</p> <p>P5: ... I've got quite a busy family...</p> <p>P7: Not having enough time</p>	4	<p>Some students were asked what might 'get in the way of practice'. Responses outlined the challenges that each student perceived in practising mindfulness. Responses indicated that distractions and a perceived lack of time might challenge practice.</p> <p>P5 gives illustrative examples of the home context, describing possible sources of distraction such as siblings and pets. P7 also gives illustrative examples of a similar nature suggesting that distractions and a perceived lack of time was also a concern for her. She explicitly states a perceived lack of time</p>

				as a challenge to practice:
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#### 4.4. Comparing and contrasting units of analysis

The MBI appeared to be more successful for some students than others and so individual student's patterns of data were compared and contrasted to explore process factors that may have influenced student's outcomes (see table 16).

*Table 16: an analysis of evidence from individual students' outcomes*

<b>Participant</b>	<b>Evidence supporting theoretical propositions</b>	<b>Evidence for rival, or alternative propositions</b>
2	<p>Form Tutor Total Difficulties SDQ decreased.</p> <p>Contextual variables outside of researchers control responsible for unexpected outcomes.</p>	<p>Mindfulness CAMM score decreased</p> <p>Student SDQ Total Difficulties score increased</p> <p>Relatively lower ratings on CGSRS</p> <p>Joint lowest attendance</p> <p>Interview data suggested lower level of enjoyment</p>
5	<p>Attendance 100%</p> <p>Student, parent and Form Tutor Total Difficulties SDQ scores decreased post-intervention</p> <p>Impact supplements suggested severity of difficulties as reported by student and mother had decreased in areas of distress/upset, friendships, classroom learning and leisure activities.</p> <p>Interview data indicated good understanding of mindfulness and talked about experiences practising mindfulness and being more aware.</p>	<p>Lower ratings on CGSRS (similar to P2)</p> <p>CAMM levels unchanged post-intervention</p> <p>Interview data suggested experiencing frustration and annoyance in relation to practising mindfulness.</p>
7	<p>Increase in CAMM scores post-intervention</p> <p>Parent Total Difficulty scores decreased by 2 points.</p>	<p>Student feedback during sessions indicated unhappy with the group she was in, did not feel sense of belonging to group.</p>

	Contextual variables outside of researchers control responsible for unexpected outcomes	<p>Student Total Difficulties SDQ score stayed the same.</p> <p>Teacher Total Difficulties SDQ score increased by 13 points.</p> <p>Joint lowest attendance of 64%</p>
1	<p>Attendance 100%</p> <p>Very high ratings on CGSRS</p> <p>6 point increase in mindfulness as measured by CAMM</p> <p>Decrease in student, parent and Form Tutor Total Difficulties SDQ scores.</p> <p>Decrease in severity of difficulties in areas of distress/upset, friendship and leisure activities as measured on SDQ impact statement.</p>	

Participant 2 was considered to have experienced less successful outcomes which were not expected outcome measures for participant 2 suggested little or no positive change, such as scores on the Strength and Difficulties Questionnaire which indicated P2's perception that difficulties had increased.

P2's level of engagement and enjoyment of the sessions was also questioned. P2 gave the lowest ratings for 'Listening' on the CGSRS when compared with other participant's scores and scores for the other categories were also lower. This may partly reflect therapeutic rapport, as students were instructed to indicate along a line to what extent 'The leader and group listened to me and liked me'.

P2's comments during the post-intervention interview suggested that his level of enjoyment of the sessions was lower than the enjoyment expressed by the other participants. When he explained why he had enjoyed the Mindful Drawing activity the most he stated 'I don't know... I just liked that lesson because...it was different from the others...' which raises the question to what extent (if at all) he enjoyed the other sessions. When asked which activities he had enjoyed the least he commented 'Probably the closing our eyes part where we were like breathing' and as most Mindfulness practices incorporated both closing one's eyes and/or paying attention to the Breath, P2's enjoyment of the sessions is questionable.

P2 shared the lowest level of attendance with P7 (64%) and one could argue that it was lower because he was not enjoying the MBI as much, so less motivated to attend. Enjoyment of learning experiences seemed important to him; for example, when he was asked how the sessions had fitted in to his school routine he replied 'Er there was times where I didn't go cause of P.E. cause I enjoy P.E.' The Mindfulness sessions were competing with other subjects, such as Physical Education which based on the comments made, he enjoyed to a greater extent.

P2's comments in the post-intervention interview suggested that his engagement with the programme was linked to his parents views and interest; for example comments such as 'I've been talking to my mum and dad erm and I described to them they still don't get it'. P2's parents failed to complete and hand in the post-intervention SDQ which suggested that they were not invested in the programme, and perhaps did not value it; beliefs that may have influenced P2's engagement. Although more data would be needed to confirm these inferences, Greco and Hayes (2008) stated that during their initial studies they found children's engagement in the programme was linked to parental interest and involvement.

P5's ratings on the CGSRS's were relatively low and were similar to P2's ratings. P5's CAMM scores had also indicated no increase in mindfulness. In contrast to P2, Participant 5's attendance was higher and Total Difficulties SDQ scores had decreased as had some impact scores.

In her post-intervention interview P5 had described how at times, during her mindfulness practices, she had felt frustrated and annoyed; for example:

‘it's really hard to bring your attention back because like as you bring it back you just keep thinking about it but then it's like hard because you didn't finish your thought so you get quite annoyed so you try and finish it.’

These feelings are likely to have interfered with the level of enjoyment she associated with Mindfulness.

P5's responses to post-intervention interview questions suggested a greater level of understanding of mindfulness and mindfulness practices as her descriptions of her experience of mindfulness were detailed and authentic, a quality lacking in P2's responses.

Based on triangulation of evidence from different sources, P2 and P5 appeared to have enjoyed the MBI to a lesser extent when compared to the other participants, but they differ in terms of their attendance levels. Although, at times, P5 experienced frustration and annoyance when practising mindfulness, her attendance, and her comments made about her experience of practising Mindfulness in the post-intervention interview suggest she may have engaged with the MBI to a greater extent.

Student engagement has been defined as participation in effective practices, both inside and outside the classroom, which leads to a range of measurable outcomes (Kuh et al., 2007).

Similarly, Hu and Kuh (2001) defined engagement as the quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes. The

evidence from the post-intervention interview and attendance rates suggests that P5 exerted a greater effort to practising Mindfulness both in the sessions and outside the sessions and therefore it is suggested engaged to a greater extent than P2. This may have been linked to better outcomes for P5 when compared to outcomes for P2.

During the course of the MBI Participant 7 had provided feedback which suggested that she was unhappy in the group and felt a degree of isolation and difference from the other members of the group and at one point, early on in the intervention, she had asked if she could move to the other group. Participant 7 appeared more socially mature than the other participants and at times appeared frustrated with the comments and behaviours of her fellow group members. After my pre-intervention observation of participant 7 in the classroom, her teacher had commented participant 7 often struggled in group work scenarios (as had I had observed that lesson) due to her reluctance to work with peers outside of her close friendship group. The post-intervention observation of participant 7 in a different lesson corroborated with the teachers comments as she appeared much more comfortable and engaged working with a group of close friends.

Participant 7's level of enjoyment in the MBI may have been affected by her feelings of affiliation to the group and may have resulted in a lower rate of attendance. P7's inconsistent outcomes may have been a reflection of variables outside the researchers control. After the post-intervention interview P7 had discussed experiencing greater levels of stress at home and her frustration at being told that she would not be getting the extra support she expected at school for the next academic year. Increased levels of stress at home and frustrations associated with the school system may have resulted in inconsistent outcomes rather than factors associated with the MBI itself.

Participant 1 was considered to be amongst those participants with relatively better outcomes. Participant 1 shared the same level of attendance as P5 (100%) but the evidence suggested he enjoyed the sessions to a greater extent. P1 was dissimilar to P2 in terms of attendance rates (his attendance was higher) and enjoyment of the MBI. P1's average ratings on the CGSRS were relatively higher which suggested that he viewed the MBI more favourably than P2 and P5. P1's outcomes as measured by the CAMM and SDQ were also better.

It would appear from this initial analysis of a small sample of individual participant's data, that engagement with the MBI, in addition to the participants views of the intervention as measured by the rating scales, may have been linked to outcomes.

#### 4.5. Summary of results

The researcher presented evidence for the studies theoretical propositions so that the researcher's conclusions in relation to the research questions could be judged as credible and trustworthy. A method of triangulation and replication logic was applied in order to evaluate the evidence for the benefits of this MBI, the processes that influenced the outcomes and the student's experiences of the benefits.

Some evidence was found for an increase in mindfulness across the two groups, with most students experiencing an increase in mindfulness as measured by the CAMM, although there were some exceptions. Reports from students during the semi-structured interviews helped to confirm these findings. There was some evidence for a decrease in difficulties as measured using the SDQ, with most parents' scores indicating a decrease in difficulties. Students were able to give multiple examples of ways that they used mindfulness to address difficulty and 7 of the 8 students referred to the calming and relaxing effects of mindfulness practice. The

evidence for improved attention and learning from the SDQ, observations and semi-structured interviews was less conclusive. The researcher proposed a number of generalisations to the theory of how MBI's work, related to the formal practice of mindfulness, student engagement, group factors, the level of challenge experienced by the students related both to the MBI and external contextual factors, and the researchers success in adapting mindfulness for the students as measured by the students understanding of mindfulness.

## CHAPTER 5

### DISCUSSION

In this chapter the evidence for the researcher's theoretical propositions in relation to the research questions will be discussed to explore the benefits of the Mindfulness-Based Intervention for students and the processes that may have influenced these outcomes. The limitations of this study are also examined, such as threats to the study's credibility, trustworthiness and methodological limitations. The chapter concludes with implications for future research and practice in the area of MBIs, in light of the study's findings. The students' accounts of their experiences of the MBI are used as evidence for the benefits of this MBI and to illuminate the processes involved in MBI's. The systematic analysis of the students' voice offers a unique insight into their experiences of practising mindfulness, which encompass both the benefits *and* challenges of mindfulness practice for beginners.

The project set out to answer the research questions by exploring the theoretical propositions the researcher had arrived at from deductive analysis of the literature.

5.1. In what ways might MBIs be beneficial (or not) to 12 and 13-year-old students?

5.1.1. Impact on level of participants' mindfulness

Levels of mindfulness increased for the majority of students as measured using the Child and Adolescent Mindfulness Measure. A significant increase in mindfulness scores for the 7 participants who were included in the Wilcoxon test was indicated by a z value of -2.023 with

a p value of less than 0.05 ( $p = 0.0215$ ) indicating that the researcher could be confident that the finding was not due to chance alone. A large effect size was calculated ( $r = -0.54$ ) indicating that the difference in pre and post-intervention mindfulness scores was large. The pattern of scores between Group A and Group B was largely uniform, which increased the trustworthiness of the data. The themes that emerged from interview data collected post-intervention and thematically analysed correlated with outcomes associated with mindfulness, as found in the research; for example, students' comments suggested an improved self-awareness and a greater awareness of their environment and experienced the calming and relaxing effects of mindfulness. The exception to the theoretical proposition was the large decrease in mindfulness experienced by P2. Reasons for this decrease were explored and the evidence was considered inconclusive, however, it was suggested that P2 did not engage to the same extent as the other students and may have experienced an increase in difficulties during the intervention that were not associated with it.

It can be concluded, therefore, that there is sufficient evidence that in most cases the MBI contributed to an increase in mindfulness and that this increase was associated with benefits such as feeling calm and relaxed and improved self-awareness. This finding is supported by Remple's (2012) review of the literature in which it was concluded that improved mindfulness was associated with reduced stress and emotional reactivity and improved self-awareness.

#### 5.1.2. Impact on difficulties

A significant difference was found between pre and post-intervention parental scores on the Strength and Difficulties Questionnaire (SDQ) suggesting parents' perceptions of students' difficulties decreased. The Wilcoxon test calculated a z value of -2.388 and the p value for this output was below 0.05 ( $p = 0.0085$ ) which suggested it was likely this difference was not

due to chance alone. A credible explanation for this decrease in perceived difficulties is that students' difficulties within the home setting decreased from pre-intervention levels to post-intervention levels. Interestingly, parent's pre-intervention scores on the SDQ were significantly higher than scores obtained by the students and form tutors as indicated from the output of the Kruskal-Wallis test suggesting that they initially perceived the greatest difficulty.

Analysis of changes to Total Difficulties (TD) scores from the SDQ indicated examples of both convergence and divergence between the data from respondents for each student's data set; for example, the scores calculated from P4 and P5, their parents and Form Tutors all converged, with all respondents scores indicating a decrease, whereas for other participants one respondent's TD score might have increased, and the other two decreased. This variability of results was replicated for students in both Groups A and B, increasing the trustworthiness of these findings. Variability in outcomes was perceived by the researcher as a feature of each data set.

When asked directly if students had noticed any changes since completing the MBI, students' comments during the post-intervention semi-structured interview, suggested that they had not experienced a large degree of change. A lack of statistical significance found for the change between TD scores on the SDQ pre- and post-intervention scores corroborates with this finding, however 5 out of 8 student TD scores had decreased and four student scores for the severity of their difficulties had also decreased.

Although no significant differences were found in pre and post-intervention TD student and Form Tutor scores the themes that emerged from the interview data suggested student wellbeing had been enhanced. Student's comments suggested they tended to use mindfulness

practices during times of stress or frustration and that they found practising mindfulness had a relaxing and calming effect. These themes indicated that the students were able to use mindfulness as a method to aid in the regulation of their emotions and enhanced wellbeing through increased levels of calm and relaxation. Hooker and Fodor (2008) stated that calm was a by-product of mindfulness, not an aim, but Huppert and Johnson (2010) suggested that feelings of calm following mindfulness practice was a motivating factor for teenagers. Huppert and Johnson (2010) found that the adolescent participants were more engaged if the outcome was enhanced feelings of calm. Broderick and Metz (2009) and Burnett (2009) also found increased levels of calmness and relaxation for participants. The researcher referred to Davis's (2012) conceptualisations of mindfulness to propose that the students appeared to be using mindfulness in a way that might be described as a method. Monchat et al (2013) described how mindfulness introduced a greater degree of stability for participants, whereby they experienced less distress and reactivity and felt more relaxed and in control of their emotions.

Alternatively, Semple (2010) suggested mindfulness had improved the emotional regulation of his participants and suggested that the mechanism by which this was achieved was through decentring from thoughts and emotions. The underlying mechanism of self-regulation was not measured in this study, but Semple's (2010) proposed process could explain how mindfulness practices helped the students to manage their difficulties more effectively. The students were unlikely to have been consciously aware of these abstract processes or have the capacity to describe them.

Zenner (2014) had concluded from a review of the evidence-base that smaller effects were found for decreased stress and better coping and resilience following mindfulness interventions, which perhaps suggests that not finding a significant difference in SDQ scores

was to be expected. Alternatively, although the effects as measured by the SDQ could not be described as significant in statistical terms, this may not truly reflect the significance of change in real world terms.

### 5.1.3. Attention and learning

Observational data obtained using the Cognitive Abilities Profile indicated no observable change in the students' behaviour post-intervention, which converged with findings from the SDQ indicating a lack of significant change found by Form Tutors. This lack of change in the learning behaviour of the students, however, was likely to be influenced by contextual changes pre- and post-intervention, such as the post-intervention observation being carried out towards the end of the academic year and observing students in different subjects post-intervention, which made comparisons between the attention and learning behaviours of students pre- and post-intervention unreliable.

It appeared from observational analysis using the CAP, that Group A members experienced greater improvements to attention and behaviour for learning in the classroom, but that these improvements were not experienced by all group members. Student's comments during semi-structured interviews suggested that members from both groups had experienced improved concentration and focus. The researcher concluded that there was insufficient evidence from the triangulation of the findings from the different data sources for the benefits of MBI's on student's attention and learning. This finding was unexpected and conflicted with the findings from reviews by Weare (2000) and Zenner (2014) which found evidence for an association between MBI's and increased cognitive capacity to attend and learn.

## 5.2. What processes influenced the outcomes of this MBI?

### 5.2.1. Group cohesion

The Teaching Assistant's ratings on the weekly evaluation questionnaires suggested that Group B had achieved less group cohesion when compared to Group A. This was confirmed by reports from two Group B members in semi-structured interviews and anecdotal evidence in the form of feedback the researcher had received from P7 to suggest she was unhappy in the group. The CGSRS ratings for the extent to which students felt listened to by the group and group leader were higher for Group B than Group A, which did not corroborate with findings.

Semple (2005) highlighted group support as a factor that may influence the outcomes of MBIs delivered to groups, however, the researcher could not find evidence to suggest lower group cohesion within a mindfulness intervention lead to poorer outcomes. It was difficult to judge the degree to which group factors impacted on Group B's outcomes, especially as there was evidence to suggest the MBI was most beneficial to Group B members, when compared to Group A members. It was concluded that there was insufficient evidence to suggest group factors lead to poorer outcomes for Group B members.

It was useful to have a background on each student's difficulties and information provided by P7's class teacher helped to put her difficulties within the MBI into context. This background information influenced the researcher's choice not to move P7, and to support her to manage her frustrations in a mindful and more flexible way. Outside a research setting, a practitioner would perhaps be less concerned with changing group members around to ensure better group cohesion or would take time to carry out some mindfulness practices to encourage kindness

and compassion to enhance group cohesion, rather than sticking rigidly to an intervention plan.

### 5.2.2. Integration with home and school settings

The degree to which mindfulness was integrated into the home and the school setting varied between participants. Some participants found it useful to be reminded by school staff about homework and the session timetable, whilst others did not have this support from school staff. Support from school staff appeared to be most evident for P6; P6 was given consistent support, both practical support, i.e., homework reminders and frequent opportunities to talk about the sessions with his Teaching Assistant. On reflection, the researcher would attribute some of the success of the MBI for P6 to be associated with this additional support from his Teaching Assistant.

The degree of parental interest and involvement in the MBI was illuminated by participants' comments referring to conversations they had had with parents about the MBI, parental attendance at the introductory session (no parents attended) and completion of questionnaires. Most students reported having had a conversation with a parent about the MBI, but parental involvement appeared to be limited to conversations of this nature. Goalen (2013) had held an open evening for the parents of pupils participating in her study but also found no parents attended.

On reflection, more time invested in engaging parents at the beginning of the process, and encouraging them to attend the introductory session could have enhanced parental involvement; for example, by encouraging them to support the students at home with their homework. Perhaps if a more integrative approach had been achieved; for example, by parents attending an introductory session, such as in Semple's study (2010), outcomes would

have been enhanced. Stallard's (2005) review of the impact of parental involvement in similar therapeutic interventions, such as CBT, found the evidence for a greater level of parental involvement leading to improved outcomes was inconclusive. Greco and Hayes (2008), however, found children's engagement was linked to parental interest and involvement in a mindfulness programme.

Ingoldsby (2010) reviewed interventions to improve family engagement in child mental health programmes and found that practical factors, such as transportation to sessions and parent schedules, as well as psychological factors, such as parental resistance and beliefs about treatment, acted as barriers to engagement. Ingoldsby (2010) found evidence for the effectiveness of explicitly addressing these practical and psychological barriers as families entered treatment, in improving engagement. A lack of consideration of these barriers to engagement experienced by parents in this study resulted in barriers being overlooked and not addressed; for example, parents may not have been able to attend the introductory session prior to the MBI due to work and family commitments, especially as the session was scheduled at the end of a school day. Furthermore, parents may have believed that the child's difficulties were situated within the child, and so therefore may not have been aware of the potential impact of family system factors, such as stressors associated with the home environment, on their child's difficulties. In addition, school staff may not have been aware of the impact of school system factors on the child's difficulties therefore, limiting the extent to which they believed their engagement would help the process. Spending time talking to parents and school staff about the benefits of their engagement may have helped to address beliefs that were potentially barriers to engagement.

Ingoldsby (2010) found evidence that a practitioner's collaborative relationship and personal bond with parents resulted in greater parental engagement throughout the course of an

intervention. In this study contact with parents and staff was limited and so no such relationship was formed which may have impacted on both parental and staff engagement. The researchers distance from school staff and parents may have helped to minimise respondent bias and there was no time available for the approach suggested by Ingoldsby (2010). The implications of Ingoldsby's findings, however, suggest that more time should be allocated to work with parents and school staff in order to improve engagement which could lead to enhanced outcomes. Practitioners may have to decide whether to work with a smaller number of children and young people more intensively in order to increase the time and effort invested in building relationships with parents and school staff and addressing barriers to engagement.

Choosing not to engage with parents and school staff may have resulted in missed opportunities outside of sessions,; for example, for students to be reminded of homework and daily practice, support to incorporate practice into daily schedules, support in finding an appropriate quiet space for practice, opportunities for reflective discussion about mindfulness and for the practice of mindfulness to be modelled by adults. Most students had had conversations about mindfulness and the MBI with family members and peers, and some appeared to experience difficulties explaining what mindfulness was to others. This could have been alleviated if there had been more opportunities for the researcher to explain mindfulness to parents and school staff. Effective engagement of parents and school staff may help sustain and enhance outcomes further, beyond the end of the MBI, as parents and school staff may choose to continue to support students in practicing mindfulness.

### 5.2.3. Practising mindfulness outside of the sessions

Staff and parents reminding students to practice and complete homework may have contributed to enhanced outcomes for some students, if it resulted in an increase in time spent practising mindfulness. As Greco and Hayes (2008) pointed out, homework is an important component of mindfulness programmes, as is everyday mindfulness practice to sustain children's motivation, help develop daily habitual practice and enhance the generalisation of mindfulness across contexts. The relationship between home practice of mindfulness and levels of mindfulness in adults has been highlighted by Carmody and Baer (2008). P5, in particular was able to give detailed accounts of mindfulness practice at home, which had an authentic quality to them, similarly P1 gave specific examples of how he had used mindfulness in times of stress and frustration; both students experienced positive outcomes. There was insufficient evidence from this study to confirm that more time spent practising mindfulness improved outcomes, although for some students it appeared to enhance outcomes and enrich their understanding of mindfulness.

The duration of Monchat et al's (2013) intervention was similar to this study, but participants were supplied with audio-recorded instructions to support home practice. Providing the students who participated in this study with a scaffold for practice outside of the sessions such as audio-recorded guided practices may have encouraged more practice, enhancing levels of mindfulness.

The theme of mindfulness for a specific purpose that emerged from students comments during the semi-structured interviews indicated that many of the students used mindfulness at times when they felt they felt it was needed; for example, in times of stress or frustration, rather than daily. This approach to mindfulness practice suggested that the students found

mindfulness useful to them, and may have perceived it to be more beneficial as a method to use at these times of need. Monchat et al (2013) described how participants (aged 16-24) moved from a stage of engaging with mindfulness as a stress management technique, through ongoing practice, to a stage in which the insights gained from practice and application of mindfulness changed their perceptions so that they identified less stress. Interestingly, themes that emerged from student interviews in this research project suggested that most students were at a stage where they were using mindfulness to manage stress and had not yet reached the stage of 'insight and application', identified by Monchat et al (2013). Perhaps the students had not achieved the level of practice needed to move onto this stage or 'mindset'.

#### 5.2.4. Student engagement and enjoyment

Stallard (2013) reviewed the treatment effects of study's on school-based programmes and found that factors such as student engagement might be important moderators of treatment effects. Comparing and contrasting student outcomes lead the researcher to conclude that student engagement helped to explain the poorer outcomes for P2 and better outcomes for P5. Both student accounts indicated mixed views about mindfulness; P2 reported feeling awkward in sessions and P5 reported feeling frustrated whilst practising mindfulness, but the evidence suggested that P5 practiced mindfulness to a greater extent at home and attended more of the sessions. In a similar study, Goalen (2013) found that if the pupils did not enjoy the mindfulness practices they tended not to engage or continue to practice out of the sessions. This appeared to apply to P2, but applied to P5 to a lesser extent as she was able to engage in the MBI, without enjoying it to the same extent as most of the other students. It was concluded that student engagement may have been a factor that moderated outcomes for these students.

One factor that may have influenced outcomes was the researcher's level of training and experience in delivering MBI's to children and young people. On reflection, the researchers own experiences of practising mindfulness ensured authenticity, helped to motivate the students and encourage them to have patience (Kabat-Zinn, 2003) suggested patience was essential in practising mindfulness) and helped answer the student's questions on mindfulness. The researcher felt comfortable facilitating discussions reflecting on practices the students had experienced, as well as the challenges to practice. It was concluded that the researcher was competent enough to deliver a more general Mindfulness-Based Intervention rather than a more formalised programme such as Mindfulness-Based Cognitive Therapy or a Mindfulness-Based Stress Reduction programme. Goalen (2013) came to a similar conclusion and argued that it was possible for a Trainee Educational Psychologist to develop and deliver a mindfulness scheme of work. The question of whether outcomes would have been enhanced if a trained mindfulness teacher had been used and to what extent, cannot be fully answered by this study as the researchers competencies were not judged by an authority in this field. Although the literature indicated some, such as Burke (2010) believed that these programmes would be better taught by trained mindfulness teachers, this was not been confirmed or refuted by research evidence.

The issue of student engagement also raises the question of whether it is ethical for students to keep attending an MBI if they are disengaged. In the researcher's own experience of running an MBI in a school setting, although P2 and the other participants were repeatedly reminded that they could withdraw at any time, some of the comments made by school staff suggested that they *should* attend and if they had missed a session they wanted to know if students had a valid reason for missing a session. On reflection, it was concluded that MBI's could be potentially oppressive to children and young people, as suggested by Reverly (2014), if

students had felt coerced into participating or may have believed they did not have a choice despite repeated reassurances to the contrary from the researcher. The power relationships that exist in schools between school staff and students may threaten the extent to which students have the free will to choose not to participate in both targeted and universal mindfulness programmes situated in school settings. It is suggested that a possible implication for practitioners wishing to engage in anti-oppressive practice would be a need to monitor engagement in a variety of ways; for example, by interpreting behaviour and attendance levels as indicators that a participant does not want to participate or engage but is unable to vocalise this.

#### 5.2.6. Feedback on sessions

The Teaching Assistant's relatively high ratings for aspects of the MBI across both groups, such as age appropriate content, appropriate language used and perceived benefit to the students, suggested that she judged the MBI to be well adapted to meet the needs of the students. The student's accounts of experiences in the session suggested that some formal practices may have been more engaging and/or perceived to be more beneficial than others; for example, practices that incorporated awareness of the breath were associated with feeling calmer and more relaxed. In contrast, comments made in relation to the Body Scan were less enthusiastic, with some student's comments indicating that it was too long and/or 'boring'. Goalen (2013) carried out a universal mindfulness programme with 7 and 8 year olds, who reported that they did not like the breath awareness activity because the pace was too slow. At the older age of 12 and 13, the students in this study may have progressed developmentally to a stage in which they could better engage with mindful breathing exercises, and therefore, find them beneficial.

The comments made about the body scan could be considered as evidence that it was not suitably adapted for all the students and the expectation that 12 and 13 year old students would attend for 15 minutes to a formal practice was too high. Perhaps these longer practices could have been introduced at a later stage, when the students had developed their ability to attend to bodily sensations further.

Some of the comments students made about mindfulness practices and conversations they had had with others suggested difficulties understanding the purpose of some of the practices, which could have been linked to the quality of teaching or difficulties understanding the practices which did not have immediate effects, such as the mindful walking practice.

It appeared that for most of the students, the MBI was well matched to their developmental stage and interests. One group of students, Group A, appeared to be more socially and emotionally mature than the other, and appeared to have a greater level of language proficiency; for example, they found it easier to find the language to describe their experience of a practice and reflective discussion. The MBI used in this study appeared, at the time of delivery, to be most appropriate for Group A, and perhaps a more sensory-based, kinaesthetic programme would have met the needs and interests of Group B to a greater extent. Analysis of the results of the MBI, however, indicated that the greatest average increase in mindfulness was experienced by Group B and some members of Group B experienced just as good outcomes, if not better outcomes, than members of Group A; for example parental SDQ scores for Participant 6 (member of Group B) decreased by 8 points and his form tutor's SDQ scores decreased by 12 points. One can conclude, therefore, that Group B were not disadvantaged by their level of language skills and level of maturity, and that they were able to access and benefit from the MBI to, at least, the same extent as Group A.

### 5.3. Limitations

#### 5.3.1. Subjectivity of measures

Measures of mindfulness, such as the CAMM remain largely subjective. It is possible that responses on the CAMM's may have been influenced by respondent bias. Respondent bias was perhaps more of a threat to the credibility of findings from this project as the CAMM's questionnaires were administered by the researcher who had also delivered the MBI. Similarly respondent bias may have influenced comments made by students in the post-intervention interview. Data on the change to students perceived difficulties as indicated by themes that emerged from student interviews could be triangulated with data obtained from the SDQ's from respondents other than the students themselves, such as parents and form tutors to increase the credibility of findings.

Data indicating gains in mindfulness was more difficult to confirm. No reliable, objective measures of mindfulness were indicated in the literature, although Tang et al (2012) and others have suggested that neuroimaging and EEG data could be used to suggest associations between mindfulness and increased activation of certain areas of the brain. The reliability of measures such as neuroimaging and EEG data could be used to suggest associations to mindfulness at best. Mindfulness remains a largely subjective phenomenon and qualitative methods, such as the student interviews used in this project and those employed by Monchat et al (2013) offered a better representation of the complex and subjective experiences of the students.

The SDQ was also a subjective measure reliant on parent, Form Tutor and student judgements so responses were also at risk of being biased; for example, the Form Tutor's scores may be comprised of judgements made based on their own observations of the student, reports made

to the Form Tutor from other teachers, reports from the students or from their parents or a combination of factors. Similarly parental reports may have been partly based on conversations with their children. The scores obtained from the SDQ, therefore, may have been influenced by situational variables and contextual variables, rather than being a true measure of within-person change. None the less, it still provides useful data which can be verified from other sources of evidence, such as interview data and observational data.

### 5.3.2. Other methodological limitations

The CAMM was designed to indicate an overall level of mindfulness and did not provide information on its different facets. Other measures of mindfulness that are designed to measure its different facets may have been useful in providing more in depth information on whether there were trends or patterns in changes to aspects or facets of mindfulness. In addition, using data from another overall measure of mindfulness, as an additional source to use in triangulation, would have improved the trustworthiness of conclusions drawn.

The SDQ is meant to be independent of situation or context in which the difficulties are observed, however, this study found evidence for significant differences in pre-intervention scores, suggesting that students' difficulties were greatest in the home setting. The Form Tutors had no experience of the young person within the home and may have been better able to provide a more accurate perspective on difficulties the students' experienced at school. As no significant difference was found between Form Tutor pre- and post-intervention scores, one could infer that difficulties perceived by the Form Tutor within the school environment had not changed, in contrast to difficulties in the home setting. This inference was supported by observational data which suggested that there was not enough evidence to suggest a change in the behaviour of the students within the school setting.

An alternative explanation might be that some change may have occurred in the school setting, such as those changes reported by students in the post-intervention interview, but that the SDQ was not sensitive enough to measure these subtle changes to the perceived difficulty. Furthermore, changes that occurred may have been outside of the concepts the SDQ set out to measure. The SDQ was helpful in identifying and indicating change to perceived difficulties in the five domains of emotional distress, behavioural difficulties, hyperactivity and concentration difficulties, difficulties getting on with other children and kind and helpful behaviour. It was not specific enough, however, to identify and highlight changes in other, more specific domains; for example, it may identify a participant as experiencing emotional distress but is not sensitive enough to identify if that participant is experiencing high levels of anxiety and so, therefore would not be sensitive to more specific changes in levels of anxiety. Equally, the SDQ may be sensitive to changes in perceived difficulty but not so sensitive to positive change in the areas of social and emotional wellbeing, such as better emotional regulation and resiliency. A tool designed to measure domains more specific to social and emotional wellbeing and resiliency may have served as a better measure of the positive outcomes gained by the participants from the MBI.

The observations were likely to have been influenced by contextual factors. It was difficult to determine, therefore, whether any change in observable behaviour was as a result of the MBI or due to other uncontrolled factors. This issue highlighted the challenges to research situated in a non-clinical, school setting, in which it is difficult to control for confounding variables, threatening the reliability and validity of findings.

The researcher judged the student's comments during semi-structured interviews to be illuminating, adding to a description of MBI's from the perception of the recipients and

highlighting potential processes which might have influenced outcomes. Kempson (2012) cautioned, however, that students' perceptions were variable and that experience was influenced by social, psychological and functional factors. The views of this group of students, therefore, may not reflect the perceptions and experiences one would expect 12 and 13-year-old students to have in general. The potential for variability in experiences and outcomes, however, should not be overlooked by researchers and this study's findings suggest that it cannot be assumed that all students will have the same experiences of an MBI.

### 5.3.3. Limitations to the design

Data was collected during three stages; pre- and post-intervention and during the MBI itself. The reliability of conclusions drawn from pre- and post-intervention changes would be further strengthened by the inclusion of an additional stage, at a later point in time, following post-intervention to test if the outcomes were sustained, therefore strengthening the argument that the MBI lead to long-term benefits for the students and improving the reliability of measures taken post-intervention if they were repeated in the follow up.

### 5.4. Future Directions

Worthy of debate is the value of delivering targeted mindfulness interventions when compared to the advantages of delivering universal mindfulness interventions in schools. Universal interventions have the potential to positively impact on a greater number of children and young people and could help prevent the development of mental health, social and emotional difficulties by enhancing resilience and provide young people with the perspective and the skills to better manage adversity. Jennings (2013) argued that mindfulness should be integrated into the curriculum so that it was more sustainable long-term. It could be argued that the delivery of universal interventions would be a better, more effective use of

Educational Psychologists' time and resources. Universal programmes, however, require considerably more investment in time and resources both for EPs and schools. Goalen (2013) delivered a universal mindfulness programme and attempted to incorporate mindfulness into the school day with support from the class teacher, but still concluded that the extent to which mindfulness had been embedded into everyday practice was questionable. Iyadurai et al (2014) highlighted the challenge for practitioners whether delivering universal or targeted programmes.

There will continue to be a need for appropriate and timely interventions for children and young people who are already experiencing difficulty, who do not meet the threshold for more specialist services, such as the Child and Adolescent Mental Health Service, but who may be able to be supported by EPs. The Class Teacher in Goalen's (2013) study commented on the outcomes of the universal intervention and reported that on reflection, he would have preferred the programme to have been delivered to the group of pupils experiencing the greatest difficulty, in a context outside of the whole class setting. Furthermore, Flook et al (2010) found the most significant changes occurred in those CYP who were experiencing the most difficulty.

The researcher's experience of delivering an MBI highlighted the advantages of delivering MBI's to a small group of students, in which discussions, supported by an adult with a knowledge and understanding of mindfulness could be better facilitated. Small group work also provided the opportunity to better address individual student's needs by providing support to develop mindfulness skills that was more targeted and personalised. Future research exploring what works and for whom is needed to determine if a targeted intervention enhances outcomes, or if the same outcomes could be achieved through a universal programme for those students already experiencing difficulty.

This study highlighted the challenge of getting schools to invest time and resources in MBI's so that they are integrated within the school system. As an outsider to the school, the researcher had succeeded in delivering the MBI in this setting, but the contact with school staff was limited for the most part to the Teaching Assistant who attended the sessions. In addition, there was the challenge of engaging parents in the MBI. The evidence-base for the benefits of integrating MBI's into school and home systems and the impact of parental and school staff engagement on outcomes is underdeveloped, and more research is needed in this area. If the successful integration of MBI with home and school systems does prove to be beneficial then EPs and other practitioners who already have an established working relationship with the school would be best placed to carry out the preliminary work needed to fully integrate a mindfulness programme and engage parents and school staff.

Better methods of measuring mindfulness in children and young people, with greater evidence of validity and reliability, and evidence for sensitivity to change would help to increase the trustworthiness of findings drawn from these largely subjective measures. Use of multiple measurements for mindfulness in outcome research, to triangulate evidence from multiple sources would also enhance the credibility and trustworthiness of conclusions.

This research field would benefit from a greater number of comparison studies, to explore issues such as who is best placed to teach mindfulness effectively; for example, by comparing outcomes from MBI's delivered by mindfulness teachers, practitioners working with children young people with varying levels of experience of mindfulness and class teachers, who perhaps have experience of practising mindfulness or no experience at all.

It was found that process factors were integral to the delivery of MBIs. The current focus on outcomes in this research field may limit the degree to which a theory of what works for

whom and why is developed. More research, for example, to look at the developmental appropriateness of adapted practices is needed, as suggested by Jennings (2013), rather than assuming that what works for adults will work just as well for children. This study highlighted the potential effects of student enjoyment and engagement in MBIs on outcomes, by examining the experiences of students whose outcomes were not as successful to test rival or alternative theoretical propositions. It is recommended that in future research that an examination of the exceptions; those students with poorer outcomes and more challenging experiences of MBIs could be used to expand the theory and better adapt MBI's for youth.

More studies will be needed to replicate findings to enhance the trustworthiness of analytical generalisations drawn from themes derived from semi-structured interviews carried out with students. The researcher argues that despite this limitation, they added a richness and depth to the data, which is often missing in research in this area. It is hoped that the inclusion of the students' voice highlighted its value, especially when analysed in a systematic way, to ensure the researcher arrives at the most accurate representation of the students' views and experiences.

## CHAPTER 6

### CONCLUSION

This study set out to explore the outcomes of a Mindfulness Based Intervention delivered by a Trainee Educational Psychologist to a group of 12 and 13-year-old students in a school setting. The researcher aimed to inform future EP practice in this area and add to the evidence base for the benefits of mindfulness delivered in non-clinical settings. The processes that contributed to the success of the MBI were also explored in order to gain a deeper understanding of the factors that influence the outcomes of MBI's delivered to this age group. The study set out to capture the voice of the young participants in this research and systematically examine themes that emerged illuminating how the students had experienced the MBI and the outcome domains, expanding on the largely anecdotal way in which young people's views were captured in the literature. The study sought to answer the following questions:

1. In what ways might Mindfulness-Based Interventions (MBIs) be beneficial (or not) to 12 and 13-year-old students?
2. What processes will influence the outcome of this MBI?
3. What themes will emerge to illustrate how the hoped for outcomes were (or were not) experienced by the students?

This study found that students' mindfulness increased as a result of the Mindfulness Based Intervention, with a significant difference found between pre- and post-intervention scores on the Child and Adolescent Mindfulness Measure.

Parents' Total Difficulty scores on the Strength and Difficulties Questionnaire decreased significantly, suggesting that the degree of difficulty they perceived their child to be experiencing at the pre-intervention stage had decreased at the post-intervention stage. When parents were asked to rate the impact of difficulties on their child in a question on the SDQ impact supplement, most parental ratings decreased, indicating difficulties were having less of an impact when compared to the degree of impact at the pre-intervention stage.

Emerging themes from post-intervention interviews suggested students' social and emotional wellbeing was enhanced, with students reporting that mindfulness was calming and relaxing and was used as a method in times of stress or frustration. Improved self-awareness and awareness of the students' environments was also reported, correlating with changes which would be expected from practising mindfulness.

The students enjoyed and valued the content covered in the MBI, confirmed by relatively high session-by-session ratings on the Child Group Session Rating Scales and favourable weekly feedback provided by the Teaching Assistant and group facilitator. Student engagement, indicating the effort invested within the sessions themselves and outside of sessions, appeared to be a key factor in successful outcomes and was highlighted as a possible moderating factor, as were changes in circumstances external to the MBI, situated in the student's school and home systems. Post-intervention interviews highlighted the role of school staff in reminding students about homework between sessions and informing them of timetabling arrangements for the MBI. Students tended to find discussions with peers and family about mindfulness

challenging, which may have limited the degree to which mindfulness was discussed with others. Research to consider the effects of differing levels of parental and school staff interest and involvement on outcomes would help to illuminate how parental and school staffs' interest and involvement might be linked to outcomes.

Analysis of evidence from different sources indicated that reports and scores from students, parents and Form Tutors were not always consistent threatening the credibility of conclusions drawn. The data obtained was representative of differing perspectives on difficulty; an 'insider' perspective from students and an 'outsider' perspective from parents and teachers. Parent and Form Tutor perspectives may have been influenced by the differing context in which they experienced students' difficulties. The findings of this study reflect the complex nature of working therapeutically with young people embedded within the ecological systems in which they interact. Contradictions in the data, unexpected or unfavourable outcomes represented in the richness of the data obtained, were not disregarded but reasons for these variations were explored. This led to a greater understanding of possible factors that might have influenced the success (or not) of the MBI for students, such as student engagement and the degree of integration with home and school.

Researcher bias may have influenced how the data was interpreted; personal views on the benefits of mindfulness may have increased the likelihood of discounting contradicting data and adding more weight to data that confirmed the researcher's beliefs. Respondent bias was also a factor threatening the trustworthiness of conclusions drawn from the data, as was the lack of empirical, more objective measures of mindfulness. Steps were taken to reduce the limitations of each method by adopting a mixed methods approach to research and combining them, through the use of triangulation of evidence from multiple data sources. Systematic methods of data analysis were utilised such as the thematic analysis of the post-intervention

interviews. In addition, replication logic was applied to analyse the data by looking at the outcomes of Group A and Group B and comparing and contrasting. This study has greater transferability when compared to study's which are more positivist in nature as it provides a detailed description of the intervention utilised and how it was delivered.

This study highlighted the need for a better understanding of the influence of factors associated with the process of MBI's on outcomes. Factors relevant to this age group, the age-appropriateness of different types of formal mindfulness practice, rather than a focus purely on outcomes, would be supported by future research examining possible explanations for the variance in students' outcomes. Comparative studies will help to develop an MBI framework for this age group, based on what works for whom and in what format, so that conditions for delivering MBIs which optimise outcomes can be created.

The views and needs of young people should be better addressed, with a need for flexibility in response to feedback from young people during an MBI. This will help practitioners support possible difficulty or challenge they may experience in practising mindfulness as a beginner. Researchers could utilise qualitative ways of capturing young peoples' views on MBI's, which are analysed using more systematic methods so as to confirm data from multiple sources, rather than reporting anecdotal evidence which may be influenced by researcher bias.

Better measures for mindfulness and associated changes will prevent researchers becoming too reliant on reports from respondents, or on observational data which can be subject to bias. Measures sensitive to subtle changes over a relatively short period of time, such as measures for attention and executive functioning, will help confirm (or refute) reports from respondents. Measures of mindfulness appropriate for children and young people indicating change in different facets of mindfulness may help to develop a better understanding of the

mechanisms of change. Use of measures of wellbeing and resiliency designed to detect more positive change, alongside use of measures skewed towards measuring reduced difficulty, such as the Strength and Difficulties Questionnaire, may help to capture more benefits and positive outcomes of MBI. The use of multiple measures for mindfulness and outcomes will help confirm researcher's findings and add credibility to this research field.

There is a wider argument for a universal and preventative approach in which mindfulness is integrated within a curriculum. The benefits of this approach cannot be discounted, however, the researcher would argue that a targeted Mindfulness-Based Interventions, tailored to the needs of the students in this study already experiencing difficulty have the potential to provide a broad range of benefits, therefore, preventing the need for more specialist services to become involved. Furthermore, the researcher found a smaller group delivery helpful in supporting reflective discussion following practices and better monitoring of students progress.

This study provided evidence for the benefits of mindfulness for a group of 12 and 13-year-olds experiencing difficulty, confirmed by analysis of data from multiple respondents. It is also a useful representation of the factors and variables involved in Mindfulness-Based Intervention's delivered to this age group which will contribute to the development of a theoretical understanding of how MBI's work as well as equip practitioners in mindfulness with a critical view of the process and expected outcomes of MBI's delivered within a school setting.

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## APPENDIX 1: CHILD AND ADOLSCENT MINDFULNESS MEASURE

### Child and Adolescent Mindfulness Measure

We want to know more about what you think, how you feel, and what you do. **Read** each sentence. Then, circle the number that tells **how often each sentence is true for you**.

	Neve r True	Rarel y True	Som e- time s True	Ofte n Tru e	Alwa ys True
1. I get upset with myself for having feelings that don't make sense.	0	1	2	3	4
2. At school, I walk from class to class without noticing what I'm doing.	0	1	2	3	4
3. I keep myself busy so I don't notice my thoughts or feelings.	0	1	2	3	4
4. I tell myself that I shouldn't feel the way I'm feeling.	0	1	2	3	4
5. I push away thoughts that I don't like.	0	1	2	3	4
6. It's hard for me to pay attention to only one thing at a time.	0	1	2	3	4
7. I get upset with myself for having certain thoughts.	0	1	2	3	4
8. I think about things that have happened in the past instead of thinking about things that are happening right	0	1	2	3	4
9. I think that some of my feelings are bad and that I shouldn't have them.	0	1	2	3	4
10. I stop myself from having feelings that I don't like.	0	1	2	3	4

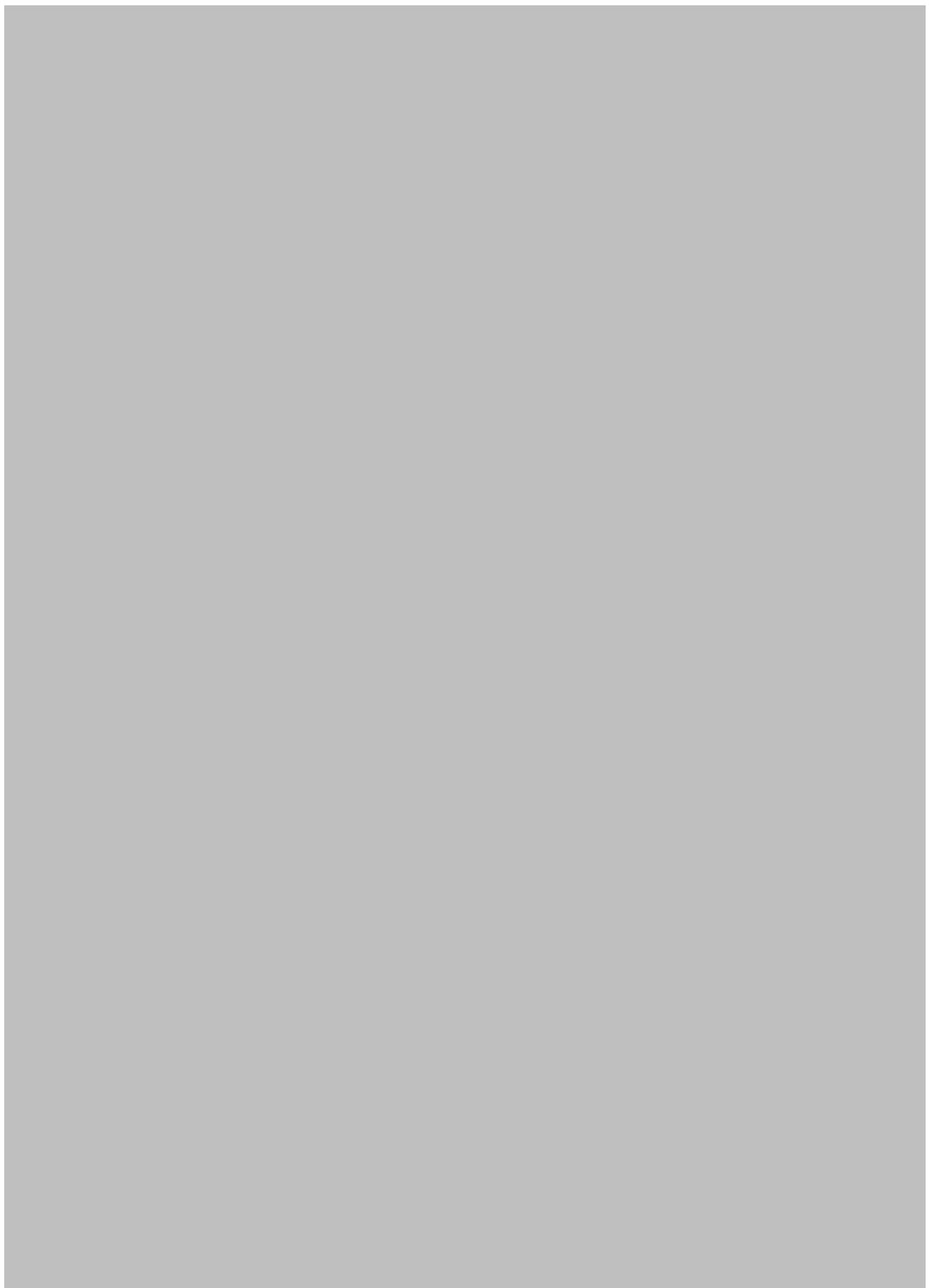
*Scoring Instructions:* Compute total score on the CAMM by reverse scoring and summing all items.

## APPENDIX 2: STRENGTH AND DIFFICULTIES QUESTIONNAIRES

### 2.1. Pupil Strength and Difficulties Questionnaire (SDQ) (pre-intervention)

Strength and Difficulties (SDQ) questionnaires are available online at <http://www.sdqinfo.org/>





## 2.2. Parent SDQ (pre-intervention)

**Strengths and Difficulties Questionnaire**

P 4-16



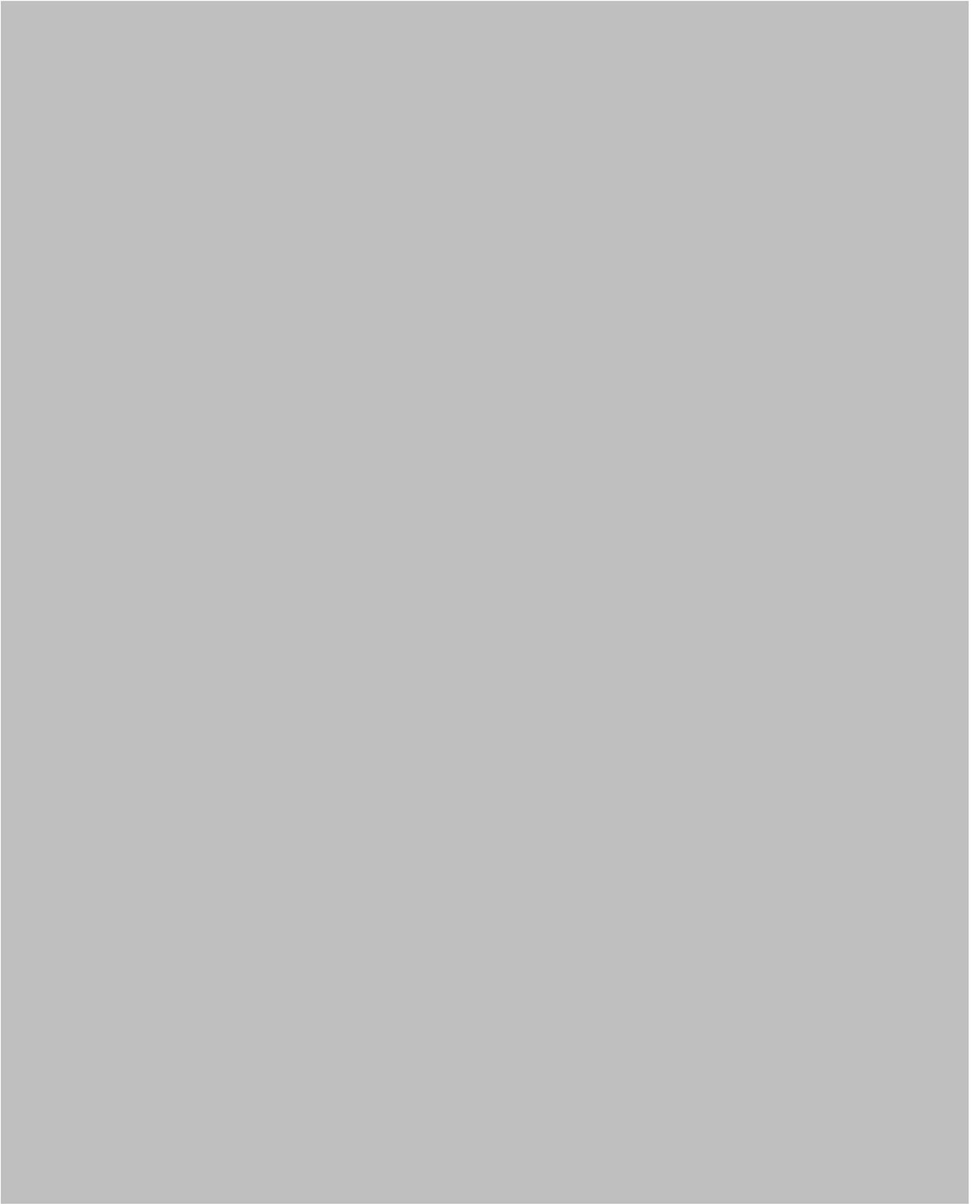


### 2.3. Teacher SDQ (pre-intervention)

#### Strengths and Difficulties Questionnaire

T<sup>+16</sup>





2.4. Pupil SDQ (post-intervention) NB: the word ‘clinic’ on the second page was replaced with ‘mindfulness sessions’

**Strengths and Difficulties Questionnaire**

**S11-17**  
**FOLLOW-UP**





2.5.: Parent SDQ (post-intervention) NB: the word 'clinic' on the second page will be replaced with 'mindfulness sessions'

**Strengths and Difficulties Questionnaire**

**P4-16  
FOLLOW-UP**





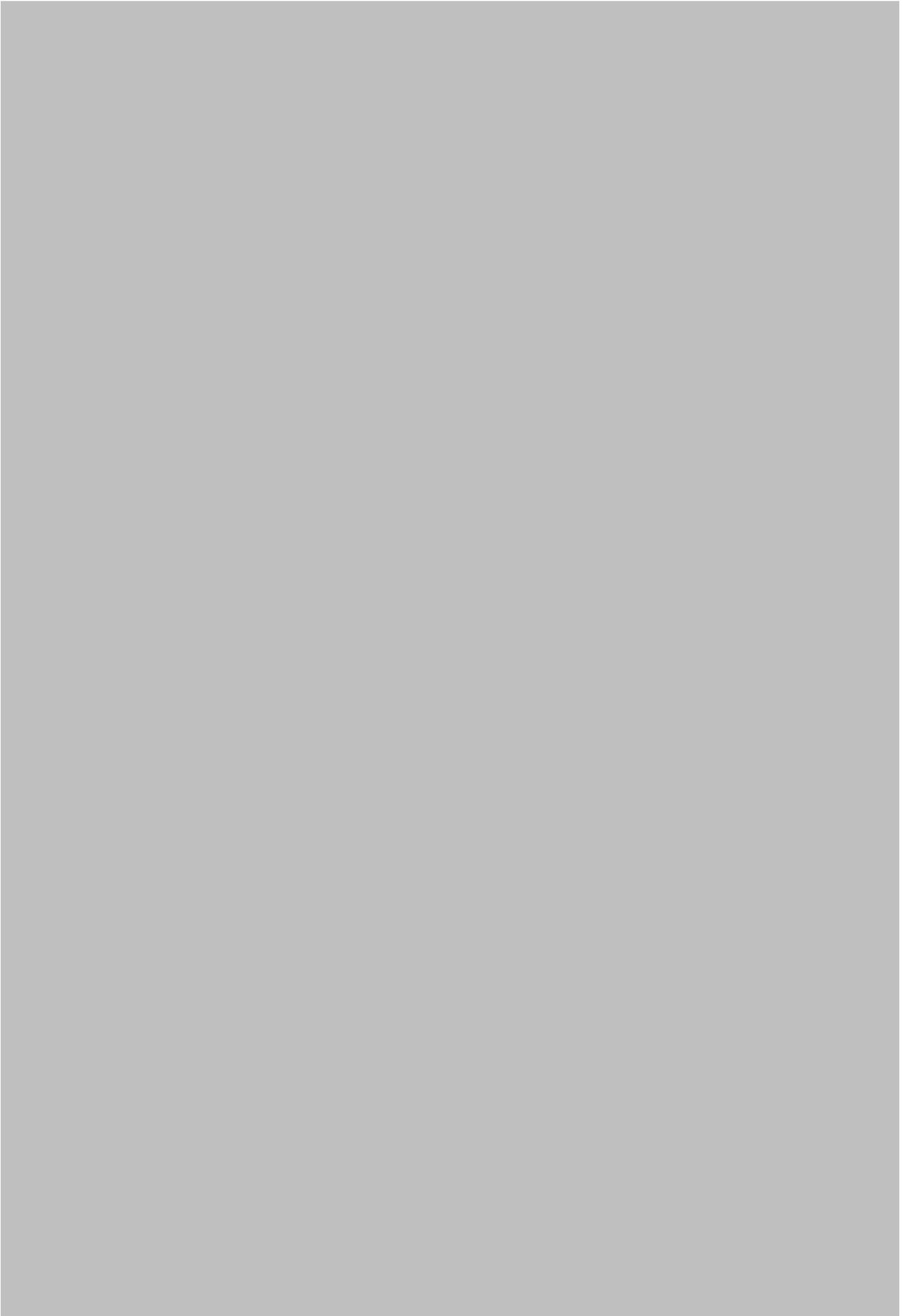
2.6. Teacher SDQ (post-intervention) NB: the word ‘clinic’ on the second page will be replaced with ‘mindfulness sessions’

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**Strengths and Difficulties Questionnaire**

**T416  
FOLLOW-UP**





## APPENDIX 3: CHILD GROUP SESSION RATING SCALES



The information on this page is for illustration purposes only.  
Please go to <http://scottmiller.com> and follow the link for  
"Performance Metrics" to download the measure

## APPENDIX 4: CONSENT FORMS

### *4.1. Students' consent form*

Hi, my name is XXXX and I am a Trainee Educational Psychologist.

Educational Psychologists are interested in how children think, behave and learn. They like to help you with things that you find difficult.

As part of my training I am doing an investigation into something called Mindfulness. Mindfulness activities have already been used with lots of other adults and children. I want to see if Mindfulness activities can help children to learn in class and help with other things as well, such as general wellbeing.

If you agree to be part of my study, you will take part in learning some different Mindfulness activities that have been tried by other children.

Here is a list of some of the activities that you may complete:

- Mindful eating
- Mindful movement
- Mindful breathing

I will teach you how to do these activities twice a week in 30 minute sessions for 6 weeks and you may also want to practice these activities at home or at times when you are feeling worried, angry or upset – it may help you to stay calm. Each week we can talk about how you are getting on.

At the beginning and the end of the 6 weeks, I will be coming in to speak to you to find out what you thought of the exercises. You will also be asked to fill in two questionnaires before and after you have completed the course. All of the information that you give us will be confidential. That means that nobody but me will know what you have put in your questionnaire or that it was you that has said something.

You do not have to take part. If you want to take part but half way through find that there is something that you are not enjoying or finding very difficult, please tell your parent / carer or teacher.

If you would like to take part in this piece of research, please could you complete the pupil consent form below. You have the right to withdraw from this study at any point and you will not be asked to give a reason.

I look forward to working with you.

Yours faithfully  
XXXX  
Trainee Educational Psychologist

If you are happy to participate please complete and sign the consent form below and return within 2 weeks to \_\_\_\_\_

Please tick boxes if you agree with each statement

I have read the Mindfulness information sheet and I understand what I will need to do to be part of the project.

I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving a reason.

I understand that the interviews will be audio recorded and I consent to this

I agree to the use of anonymous quotes

I agree that the findings from data collected may be made available to other researchers, but that data will be made anonymous.

I agree to take part in two semi-structured interview which should last no longer than 40 minutes in total.

I agree to fill out two questionnaires before and after the sessions.

I am aware that this data is confidential.

I (name) \_\_\_\_\_

Give consent / do not give consent (please circle) to take part in the research project 'An exploratory investigation into the impact of mindfulness-based approaches on learning'.

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

## 4.2. Form Tutor consent forms

Dear Teacher

\_\_\_\_\_ has expressed an interest in taking part in a piece of research to explore the impact of mindfulness activities on learning.

Mindfulness activities aim to help children to focus on what they are doing in the present moment, be it eating, walking, drawing or simply breathing. There is evidence to suggest that if people are able to be more 'mindful', they are better at: concentrating; understanding their own emotions; and self-regulating their thinking and behaviour.

The aim of this piece of research is to see whether practising mindfulness activities has any effects on pupil's classroom learning; whether they enjoy taking part in the activities and whether they notice any other improvements.

If your consent is given, \_\_\_\_\_ will take part in mindfulness sessions for 30 minutes twice a week in a small group of pupils, for 6 weeks. These activities will include mindful breathing, mindful eating and mindful movement and will be delivered by myself and a member of school staff. While the children will be encouraged to practice these exercises in their own time, this is not a requirement. The sessions are designed to fit into the school day and will cause minimum disruption to the curriculum.

The children will be asked to complete two short questionnaires; the Strengths and Difficulties Questionnaire and the Child and Adolescent Mindfulness Measure. If children find any of the questions hard to read or understand, they will be supported appropriately. Following the mindfulness programme, the pupils will complete the questionnaires again. The children will not put their names on the questionnaires but they will be given a unique number so that the questionnaires can be matched.

Before and after the mindfulness programme pupils will be asked to take part in short interviews. In the interview before the programme they will be asked how they feel about learning and what good learning looks like and after the programme they will be asked about whether they enjoyed the activities and if they made a difference. Each interview should take about 15 minutes to complete and will be completed during the school day. All of the names of the children will be changed so that information they share is kept confidential and anonymous to all excluding the researcher. The interview will be audio recorded and transcribed anonymously. Once it has been transcribed, the audio data will be deleted. All the data gathered from the interview will only be seen by myself (the researcher). The anonymised results will be used in a variety of academic outputs e.g. doctoral thesis. You will also receive a summary of the results.

To select appropriate participants parents and a teacher that knows the pupil best are asked to fill out a Strengths and Difficulties questionnaire and the Behaviour Rating Inventory of Executive Function (BRIEF) before the pupil starts the sessions. Upon completion of the programme you will be asked to fill these questionnaires out again to measure the impact of the sessions. The parent/carer will also be invited to fill in the same questionnaires. All data will remain confidential.

This research project is supported by the University of Birmingham, the \_\_\_\_\_ Educational Psychology Service and \_\_\_\_\_ Middle School.

If you would like to find out more about the group sessions, or have any further questions you can contact me by telephone on Mondays to Thursdays on \_\_\_\_\_.

Please complete the slip below and state whether or not you would like to be involved in this piece of research. If you agree to participate, please also fill in the questionnaires attached. Please send completed forms back to \_\_\_\_\_ by \_\_\_\_\_.

### 4.3. Parents' consent forms

Dear parent / carer

\_\_\_\_\_ has expressed an interest in taking part in a piece of research to explore the impact of mindfulness activities on learning.

Mindfulness activities aim to help children to focus on what they are doing in the present moment, be it eating, walking, drawing or simply breathing. There is evidence to suggest that if people are able to be more 'mindful', they are better at: concentrating; understanding their own emotions; and self-regulating their thinking and behaviour.

The aim of this piece of research is to see whether practising mindfulness activities has any effects on pupil's classroom learning; whether they enjoy taking part in the activities and whether they notice any other improvements.

If your consent is given, \_\_\_\_\_ will take part in mindfulness sessions for 30 minutes twice a week in a small group of pupils, for 6 weeks. These activities will include mindful breathing, mindful eating and mindful movement and will be delivered by myself and a member of school staff. While the children will be encouraged to practice these exercises in their own time, this is not a requirement. The sessions are designed to fit into the school day and will cause minimum disruption to the curriculum.

The children will be asked to complete two short questionnaires; the Strengths and Difficulties Questionnaire and the Child and Adolescent Mindfulness Measure. If children find any of the questions hard to read or understand, they will be supported appropriately. Following the mindfulness programme, the pupils will complete the questionnaires again. The children will not put their names on the questionnaires but they will be given a unique number so that the questionnaires can be matched.

Before and after the mindfulness programme pupils will be asked to take part in short interviews. In the interview before the programme they will be asked how they feel about learning and what good learning looks like and after the programme they will be asked about whether they enjoyed the activities and if they made a difference. Each interview should take about 15 minutes to complete and will be completed during the school day. All of the names of the children will be changed so that information they share is kept confidential and anonymous to all excluding the researcher. The interview will be audio recorded and transcribed anonymously. Once it has been transcribed, the audio data will be deleted. All the data gathered from the interview will only be seen by myself (the researcher). The anonymised results will be used in a variety of academic outputs e.g. doctoral thesis. You will also receive a summary of the results.

Pupils can only participate if you also consent to participate. If you consent to participating please could you fill out a Strengths and Difficulties questionnaire and the Behaviour Rating Inventory of Executive Function (BRIEF) (if for any reason your son/daughter does not go on to participate, this data will not be kept). Upon completion of the programme you will be sent these questionnaires to fill out again to measure the impact of the sessions. A teacher that knows your son/daughter best will also be invited to fill in the same questionnaires. This data will also remain confidential.

This research project is supported by the University of Birmingham, the \_\_\_\_\_ Educational Psychology Service and \_\_\_\_\_ Middle School. If you would like to find out more about the group sessions, please do not hesitate to contact me by telephone on Mondays to Thursdays on \_\_\_\_\_.

Please complete the slip below and state whether or not you would like your child to be involved in this piece of research. If you agree to participate, please also fill in the questionnaires attached. Please send completed forms back to school by \_\_\_\_\_.

Your child has the right to withdraw from this study at any time and he / she is not required to give a reason.

Yours faithfully  
xxxxxx (Trainee Educational Psychologist)

### Consent form

If you are happy for your child to participate in this study please complete this form and return it within two weeks

I (parent/carers name) \_\_\_\_\_

Give consent / do not give consent (please circle) for: \_\_\_\_\_ (child's name)

to take part in the research project 'An exploratory investigation into the impact of mindfulness-based approaches on learning'.

*I understand that this will involve my child:*

Answering two questionnaires

Taking part in some Mindfulness activities

Taking part in two short semi-structured interviews

I am aware that all data will be confidential and that my child has the right to withdraw.

*I understand that this will involve me (parent/carer):*

Answering two questionnaires before the sessions and two questionnaires after my son/daughter has completed the sessions.

I am aware that this data will also be confidential and that I have the right to withdraw.

*I understand that this will involve my son/daughters teacher:*

Answering two questionnaires before the sessions and two questionnaires after my son/daughter has completed the sessions.

I am aware that this data will also be confidential.

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

## APPENDIX 5: INFORMATION SHEETS

### *5.1. Parent Information Sheet*

#### ***“Why has my child been invited to take part in this study?”***

We are asking the parents of children attending \_\_\_\_\_ that have expressed an interest in taking part in this research..

#### ***“Why have I been invited to take part?”***

We would like to include more than one perspective on the impact of the sessions so our data is more reliable.

#### ***“What will happen if I agree for my child to take part?”***

If your child consents to participating, they will be asked to fill out two short questionnaires before the sessions and to fill them out again after the sessions. Pupils will take part in group mindfulness sessions over 6 weeks (2 x 30 min sessions per week). They will take part in a short interview before the sessions and an interview after; each one should last no more than 20 minutes in total.

#### ***“What will happen if I agree to take part?”***

You will be invited to fill out a total of two questionnaires before the sessions and when your child has completed the sessions, to fill out the same two questionnaires again to explore impact.

#### ***“What might be the benefits of taking part?”***

This study will help us to understand the impact (benefits and limitations) of mindfulness-based approaches for children. We would like to see if they will help your child to learn better and we expect the sessions to have a positive impact on your child's wellbeing.

#### ***“What are the possible risks of taking part in this study?”***

Your child does not have to answer or talk about anything that they do not feel comfortable with. If they do not like any of the activities, or find them uncomfortable in any way they can stop at anytime.

***“How is data kept confidential?”***

All personal details will be removed so your child and data provided by teachers and parents will not be recognised from it. The information will be stored for 10 years after the research is completed. Only the researcher will have access to this information.

***“What will happen after the study?”***

The results will be written up into a research report with a summary of findings which we will send to you when completed.

***“Who has approved this study?”***

This study has been approved by the University of Birmingham Ethical Review Committee.

***“What do I do if there is a problem or if I want to discuss something further?”***

We do not expect that any part of this study will cause harm to anyone, but if you have concerns the researcher can be contacted during office hours Mon-Fri (University address: \_\_\_\_\_, telephone: \_\_\_\_\_, email \_\_\_\_\_).  
Alternatively the research supervisor \_\_\_\_\_ can be contacted (University address: \_\_\_\_\_, telephone: \_\_\_\_\_, email: \_\_\_\_\_).

## ***5.2. Teacher Information Sheet***

### ***“Why have pupils been invited to take part in this study?”***

We are asking pupils attending \_\_\_\_\_ that have expressed an interest in taking part in mindfulness sessions.

### ***“Why have I been invited to take part?”***

We would like to include more than one perspective on the impact of the sessions as a reliability check, and we recognise that you will be able to provide a valuable classroom/school perspective of a pupils learning and wellbeing.

### ***“How will pupils be taking part?”***

If a pupil consents to participating, they will be asked to fill out two short questionnaires before the sessions and to fill them out again after the sessions. Pupils will take part in group mindfulness sessions over 6 weeks (2 x 30 min sessions per week). They will take part in a short interview before the sessions and an interview after; each one should last no more than 20 minutes in total.

### ***“What will happen if I agree to take part?”***

You will be invited to fill out a total of two questionnaires before the sessions and when the pupil you know best has completed the sessions, to fill out the same two questionnaires again to explore impact.

### ***“What might be the benefits of taking part?”***

This study will help us to understand the impact (benefits and limitations) of mindfulness-based approaches for children. We would like to see if they will help pupils to learn better and we expect the sessions to have a positive impact on pupils' wellbeing.

### ***“What are the possible risks to pupils taking part in this study?”***

Pupils do not have to answer or talk about anything that they do not feel comfortable with. If they do not like any of the activities, or find them uncomfortable in any way they can stop at anytime.

***“How is data kept confidential?”***

All personal details will be removed so a pupil’s data and data provided by teachers and parents will not be recognised from it. The information will be stored for 10 years after the research is completed. Only the researcher will have access to this information.

***“What will happen after the study?”***

The results will be written up into a research report with a summary of findings which we will send to you when completed.

***“Who has approved this study?”***

This study has been approved by the University of Birmingham Ethical Review Committee.

***“What do I do if there is a problem or if I want to discuss something further?”***

We do not expect that any part of this study will cause harm to anyone, but if you have concerns the researcher can be contacted during office hours Mon-Fri (University address: \_\_\_\_\_, telephone: \_\_\_\_\_, email \_\_\_\_\_).  
Alternatively the research supervisor \_\_\_\_\_ can be contacted (University address: \_\_\_\_\_, telephone: \_\_\_\_\_, email: \_\_\_\_\_).

5.3. Pupil Information Sheet

## Mindfulness- What's all the fuss about?!



**Ever find your mind wandering?**

**Can't seem to focus on what's going on at the time?**

**Get overly upset when things don't go your way?**

**Mindfulness could help!**

**What is Mindfulness?**

**'Paying attention to the present moment' -sounds simple enough but we can learn to be better at it and research has shown this might help with your learning and with how you feel.**

**Would you like to take part in some research with the University of Birmingham? It will mean taking part in some mindfulness sessions in a group, filling out questionnaires and taking part in a short interview.**

***“Why have you been invited to take part in this study?”***

We are asking pupils attending \_\_\_\_\_ that would like to take part in mindfulness sessions, which could have a positive effect on your learning and how you feel.

***“What will I have to do if I agree to take part?”***

You should volunteer to take part only if you want to. If they agree to take part you will be asked to fill out two short questionnaires and will have a short interview, all of which should last no more than 40 minutes in total. Then you will take part in mindfulness sessions in a group of 4 pupils over 6 weeks (2 x 30 min sessions per week). When you have completed all the sessions you will be asked to complete the same questionnaires again and take part in another short interview. The interview will be to get your points of view on the sessions and you will be asked if they have made a difference.

***“How will my parents/carers and teacher be involved?”***

A parent and the teacher that knows you best will be asked to complete two questionnaires on your learning skills and general wellbeing before and after you complete the sessions. This is so we can check if the sessions have helped.

***“What might be the benefits of taking part?”***

This study will help us to understand how mindfulness-based approaches might help children at school. We would like to see if they will help pupils to learn better and we expect the sessions to have a positive impact on pupils' wellbeing.

***“What are the possible risks to pupils taking part in this study?”***

You do not have to answer or talk about anything that you do not feel comfortable with. If you do not like any of the activities, or find them uncomfortable in any way they can stop at anytime or talk to me (the researcher), your parents or a teacher about it.

***“How is data kept confidential?”***

All personal details will be removed so the information you give us and the information from teachers and parents will not be recognised from it. Teachers and parents will not be able to link you personally to the information you give. What you say in the interview will be given a number instead of your name so only I will know who has said something and I will not share

this information. The information will be stored for 10 years after the research is completed. Only the researcher will have access to this information.

***“What will happen after the study?”***

The results will be written up into a research report with a summary of findings, which we will go through with you and the rest of the group when completed.

***“Who has approved this study?”***

This study has been approved by the University of Birmingham.

***“What do I do if there is a problem or if I want to discuss something further?”***

We do not expect that any part of this study will cause harm to you or anyone else, but if you want to talk about anything please talk to your parents and/or teachers about it straight away, or to me (the researcher) when I come in to school.

***Thank you for taking part!***

#### **5.4. Teaching Assistant's Information Sheet**

##### ***“Why have pupils been invited to take part in this study?”***

We are asking pupils attending \_\_\_\_\_ that have expressed an interest in taking part in mindfulness sessions.

##### ***“Why have I been invited to take part?”***

We would like a school staff member with an interest in mindfulness to help plan and deliver the sessions. We are interested in your perspectives on how the sessions went, who might benefit most from them and what supported or constrained the delivery of the sessions.

##### ***“How will pupils be taking part?”***

If a pupil consents to participating, they will be asked to fill out two short questionnaires before the sessions and to fill them out again after the sessions. Pupils will take part in group mindfulness sessions over 6 weeks (2 x 30 min sessions per week). They will take part in a short interview before the sessions and an interview after; each one should last no more than 20 minutes in total.

##### ***“What will happen if I agree to take part?”***

If your consent is given we will plan and deliver mindfulness sessions for 30 minutes twice a week to two small group of pupils, for 6 weeks. These activities will include mindful breathing, mindful eating and mindful movement. We will use some ready-made resources which will include information on the aims of each session, activities, PowerPoint's, and questions to aid reflective discussions with pupils.

We will keep a diary of the children's responses to the exercises. I will provide a sheet for this and it should take no longer than 10 minutes per week.

##### ***“What might be the benefits of taking part?”***

This study will help us to understand the impact (benefits and limitations) of mindfulness-based approaches for children. We would like to see if they will help pupils to learn better and we expect the sessions to have a positive impact on pupils' wellbeing.

##### ***“What are the possible risks to pupils taking part in this study?”***

Pupils do not have to answer or talk about anything that they do not feel comfortable with. If they do not like any of the activities, or find them uncomfortable in any way they can stop at anytime.

***“How is data kept confidential?”***

All personal details will be removed from the data so that you will not be identified from the data. The information will be stored for 10 years after the research is completed. Only the researcher will have access to this information.

***“What will happen after the study?”***

The results will be written up into a research report with a summary of findings which we will send to you when completed.

***“Who has approved this study?”***

This study has been approved by the University of Birmingham Ethical Review Committee.

***“What do I do if there is a problem or if I want to discuss something further?”***

We do not expect that any part of this study will cause harm to anyone, but if you have concerns the researcher can be contacted during office hours Mon-Fri (University address: \_\_\_\_\_, telephone: \_\_\_\_\_, email \_\_\_\_\_).  
Alternatively the research supervisor \_\_\_\_\_ can be contacted (University address: \_\_\_\_\_, telephone: \_\_\_\_\_, email: \_\_\_\_\_).

***Thank you for your participation***

## APPENDIX 6: INVITATION TO PARENTS FOR INTRODUCTORY SESSION



MIND  
FUL  
NESS...

I will be available to answer questions and provide information on the Mindfulness and Learning Research Project on Tuesday 20<sup>th</sup> May at 3.30pm. Please come along if you would like any further information on the project.

I look forward to meeting you,

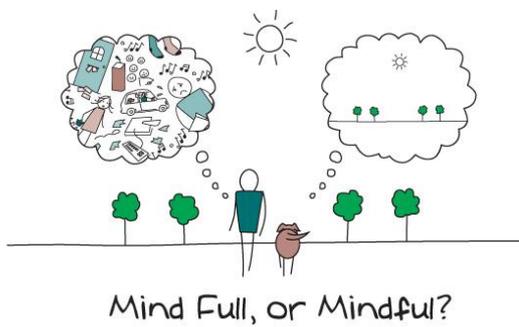
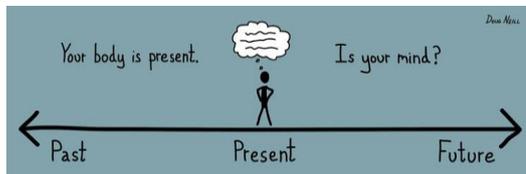
*Janet Anyika* (Trainee Educational Psychologist and Researcher)



## APPENDIX 7: POWERPOINT FOR INTRODUCTORY SESSION

### Definition of Mindfulness

Paying attention in the present moment; in a particular way, on purpose and non-judgementally (Jon Kabat-Zinn 1994)



## A move from 'doing' mode to mindful 'being':

- Past + future v. Present
- Autopilot/habitual v. Intentional/creative
- Reacting v. Responding
- Thoughts as facts v. Thoughts as mental events

## Research Evidence

The evidence from studies so far concludes that:

Mindfulness for young people is

- easy to carry out
- fits into a wide range of contexts
- is enjoyed by both students
- does no harm

## Research Evidence

Mindfulness can contribute to

- The development of cognitive and performance skills.
- Development of executive function; for example, it has been linked with better attention and improved focus.
- Can also encourage flexibility of thought, improve working memory, and enhance planning, problem solving, and reasoning skills.

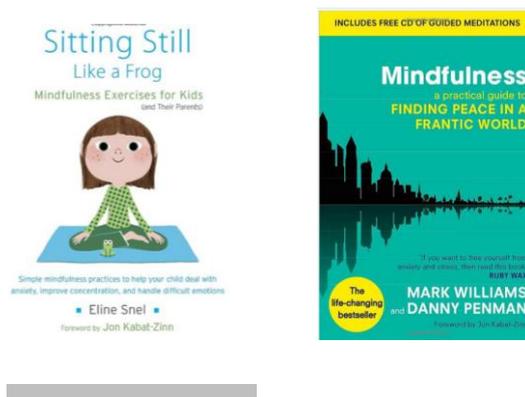
## Key research questions

- Will Mindfulness Based Approaches be beneficial to learning within a classroom context?
- In what way might MBA's be beneficial to the target group?

## Ways you can help

- Ask how the sessions are going.
- Helpful reminders; for example, “How are you getting on with your mindfulness homework this week?”
- Catch them being mindful and share this success with them.

## Further guidance and information



## APPENDIX 8: INTERVENTION PLANNING

### 8.1. Excerpt from students Practice Log

#### My Practice Log

Week 2

Day	Practice	What did I do? (e.g. breathing practice) What was I doing? (e.g. cleaning teeth)	What did I notice?
	 		

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

Week 2: Homework

Aim (what do we hope to find out?):

Practice (what to do? How often to do it?):









*Breathing in, I see myself as a mountain.*

*Breathing out, I feel solid, nothing can move or distract me.*

*Breathing in, I feel myself as still water, a calm, clear lake.*

*Breathing out, I reflect things just as they are, inside me and around me*

*Breathing in, I see myself as the big blue sky, with a lot of space in and around me.*

*Breathing out, I feel very free and at ease.*





*To be under stress,*

*To have a mess,*

*Inside.*

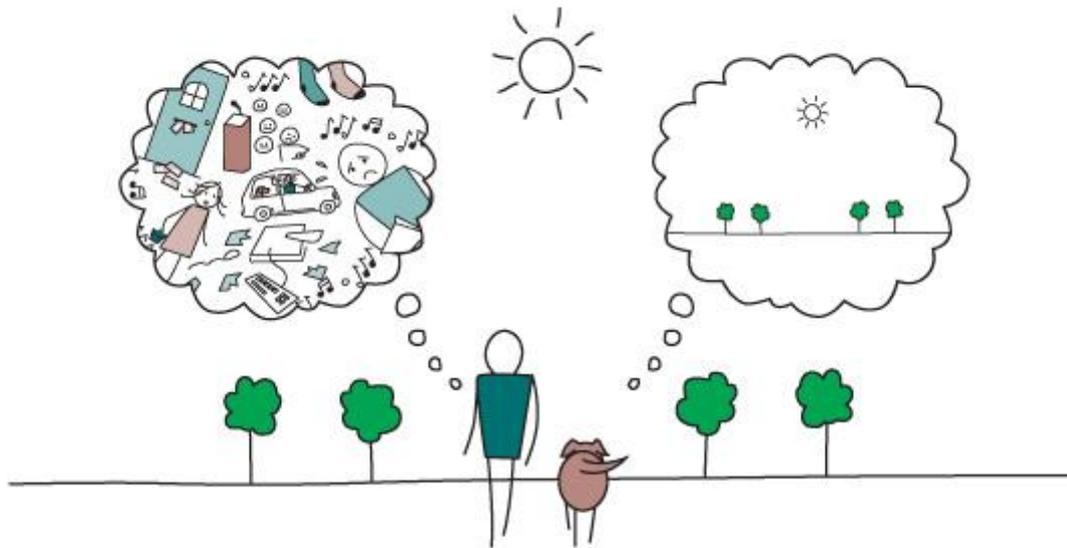
*To sit 'n' hide.*

*I am happy to clean my mind.*

*And a calmness I will find*

(front page)

# My Book of Mindfulness



Mind Full, or Mindful?

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Friendly reminders



## 8.2. Intervention session aims and activities

<b>Week</b>	<b>Session aims</b>	<b>Activities</b>	<b>Homework</b>
1	To be able to describe what mindfulness is	Discuss myths about meditation. Discuss pic of man walking his dog. Discuss kung-fu panda clip.  Raisin exercise	Mindful eating, brushing teeth
2	To practice exercises to make us more aware of what is going on around us	Listening to sounds; difference between judging and describing. (provide sounds vocab crib sheet/mix of judgements and describing words)  Drawing activity	Sounds in the classroom; which sounds did you notice? Which sounds grabbed your attention more, which sounds were more in the background?
3	To practice exercises to make us more aware of what is going on	Breathing exercise	Practice breathing exercise for 5 minutes each day.

	inside us (thoughts, feelings, body sensations)	Mindful movement	
4	To practice refocussing on the present by paying attention to our breathing and body sensations	Soles of the feet exercise/mindful walking  Body scan	Practice walking to school and between classrooms mindfully. Note down times when this is easier and times when this is more difficult.
5	To practice noticing thoughts and how we react to thoughts.  To explore how thoughts are linked to body sensations and feelings	3 minute breathing space (3MBS). Discuss when this would be useful. How it helps to slow us down giving us space to make choices/think more flexibly rather than just reacting. Make 3MBS crib cards.  Labelling feelings on clouds and discussing body sensations linked	Use 3MBS in situations where you feel under pressure. Write down what you notice each time about what you are thinking, what you are feeling and body sensations. What did you notice when you then turned your attention towards breathing?

		to these. (provide feelings crib sheet)	
6	To practice letting go	Explain concepts of 'being stuck on the thought bus' and 'fuelling the fire'.  Bubbles exercise  Guided imagery.	To continue to keep a log of mindfulness practice

### 8.3..Detailed session plans

#### **Week 1**

To be able to describe what mindfulness is (and isn't)

#### **Session 1**

Discuss definition of mindfulness. Discuss myths about meditation.

Focussing your attention on the present. What's going on in the here and now. It's about making observations without criticising, to others or yourself. It's about observing unhappiness or stress with openness and curiosity, and then letting it go.

With practice, and over time, can bring about long term changes. There are two important parts of the brain; the prefrontal cortex and the limbic system. In the limbic system is the amygdala and this part is responsible for your emotions and can sometimes take over when we are stressed (freeze-fight-flight). The prefrontal cortex is the bit of the brain responsible for organising your thoughts, planning and rational thought. Mindfulness practices can improve how these parts of the brain work together, so instead of reacting to things out of habit, we can think about things more rationally, without our judgements, emotions and feelings taking over.

Myths:

- Mindfulness meditation is not religious, it's a form of mental training
- you can meditate wherever you want (don't have to be cross-legged)
- it doesn't take a lot of time although you need to practice and be patient
- it's not complicated- it's not about getting it 'right' it's about what you learn from doing it
- it's not about accepting the unacceptable or numbing/emptying your mind

Discuss picture of man walking his dog.

Raisin activity:

Hold the raisin in the palm of your hand, how much it weighs in your hand.

Look at it as if you've never seen a raisin before. Notice where the light shines, notice the dark creases, the folds and the ridges.

Now pay attention to the texture; how does it feel between your forefinger and thumb?

Now hold it up to

Questions to follow:

How was this different to how you normally eat? (discuss how we can be on autopilot- mind is elsewhere, attention is not on eating, but thinking about something else. This is a habit, as we can take eating for granted)

How can this practice be used in everyday life?

What might be the benefits?

What might be the challenges to this?

Homework: mindful eating; to practice at lunchtime or dinner over the next couple of days.

## **Session 2 (Piloted previously with year 6's)**

### **Discuss Kung Fu Panda clip**

Mindfulness breathing exercise

(adapted from 'The Mindful Child' by Susan Kaiser Greenland)

(bottle of water and baking soda) How does it look? (shake) what does it look like now? Can't see- cloudy. Just like baking soda in water thoughts and emotions can cloud our otherwise clear minds. The more the water rests the more the baking soda settles, the clearer the water becomes. The same is true

for our minds. The longer we rest by focussing on our breathing, the more our thoughts and emotions settle down and the clearer our minds become.

Need to be relaxed and upright- so try zipping yourselves up. Imagine you have a zipper running up the middle of your body. Move ure hand up-up and over your chin "zip!", with your hand above your head give a silent wave, then drop your hands back down to rest on your knees.

Just for a few minutes feel the sensation of your breath as it is right now without trying to change it. Maybe your breath is slow and steady. Maybe it is quick and short. Maybe its regular, maybe it isn't. All that matters is you pay attention to how it feels, without overthinking it, without doing anything at all other than just resting in the experience of just breathing (letting the cloud settle).

If have time:

What did you notice? Just by observing/noticing it, it becomes deeper and slower, and the space between the in breath and the out breath grows longer. To extend this can notice what happens to your body and mind- they might begin to feel differently. Body tends to relax and mind to slow down and quiet.

Homework:

Mindful awareness of everyday activities such as brushing teeth. Note thoughts and feelings about the experiences.

Session feedback

**Week 2**

**Aim: To practice exercises to make us more aware of what is going on around us**

**Session 3**

**Listening to sounds**

Aim: to practice listening to sounds without labelling them.

Listening to sounds

Activity 1

(adapted from the 'Pass the cup' activity in *The Mindful Child* by Susan Kaiser Greenland)

Pass the Plastic bag/wind chime

Pass the plastic bag round in a circle listening to the sounds. Pay attention to any sounds that might indicate it's your turn to receive the bag. Go round one way, then reverse the direction and go round the other way.

Repeat the game but this time, all participants keep their eyes closed.

Discuss the differences between eyes open and eyes closed, and the non-visual cues which helped us to know where the plastic bag was.

Activity 2

(adapted from *Sitting Still Like a Frog* by Eline Snel)

It's not always easy to really listen to what is being said, as our minds can be elsewhere and not here. Think about a time when you were in the classroom and finding it difficult to listen to what the teacher was saying. But like looking, listening is something you can learn. All you need is deliberate attention and to learn to notice when you are not listening.

Listen to the sounds in the room without immediately wanting to label them. Is the sound high- or low- pitched? Humming? Buzzing? Does it have a rhythm? Are the sounds behind you or in front of you? Far away or close? Are they outside you? Can you hear any sounds inside yourself? Do you notice any sounds in the background?

Listening to a sound without immediately wanting to label it strengthens our ability to really listen to one another. Mindful listening can also make us more aware of the "mind chatter". It can make us more aware of how our thoughts

can influence our experience as "pleasant" or "unpleasant", so changing our everyday experiences.

Discussion;

What did you notice when listening to the sounds? Did you notice any feelings as you were listening to the sound? Bodily sensations? Thoughts? Did any images come to mind?

Homework; practice paying attention to sounds without labelling, in different situations (1) in the classroom, (2) at home (3) whilst travelling, i.e. in car, on bus, walking home.

## Session 4

Aim: to practice looking with mindful awareness by simply observing and accepting what we see just as it is.

(Activities adapted from *Acceptance and Mindfulness Treatments for Children and Adolescents: A Practitioner's guide*, by Laurie Greco and Steven Hayes).

### Activity 1

Look at these picture (present picture of optical illusion "young lady and old hag", elephant (how many legs?), Eskimo or Native American?). What do you see? (e.g. each pupil will report seeing one or the other- most can't see the second image until it is pointed out to them).

*Present the pictures again and invite the pupils to look at a picture and consciously shift their attention between images.*

It's not possible to see both images at once; the image seen is the image you choose to direct your attention towards. You can choose how you see and therefore experience things.

Many wonderful and meaningful details are missed altogether, simply because we don't pay attention to them. How often do we look at objects shapes, colours, features without judging what we are looking at? We often associated certain

images or objects with specific adjectives and with judgements. Often we think that we are taking everything in that we see when actually we can be missing a lot or distorting (changing) what we see.

## Activity 2

Draw this object

Now spend 5 minutes looking at this object. Notice the different shapes that make it up, the different colours and shades of the object. Notice where the light hits the object and any dark creases or parts of the object in the shade. Pay attention to the objects edges, its curves. Notice the details; any imperfections, any tiny features that you did not notice before.

Draw the object again.

*Pupils compare first and second drawings.* Pupils discuss the differences between the two drawings their experiences of seeing the object.

Draw from memory any object that you use every day. Might be a television, telephone, bag, alarm clock.

Homework; repeat the drawing of the everyday object, but this time spend time looking at the object. Bring it to our next meeting.

## Week 3

**Aim: To practice exercises to make us more aware of what is going on inside us (thoughts, feelings, body sensations)**

### Session 5

Aim:

(adapted from 'The Mindful Child' by Susan Kaiser Greenland)

Demo: (bottle and baking soda) How does it look? (shake) what does it look like now? (Can't see- its cloudy). Just like baking soda in water thoughts and emotions can cloud our otherwise clear minds. The more the water rests the

more the baking soda settles, the clearer the water becomes. The same is true for our minds. The longer we rest by focussing on our breathing, the more our thoughts and emotions settle down and the clearer our minds become.

Need to be relaxed and upright- so try zipping yourselves up. Imagine you have a zipper running up the middle of your body. Move ure hand up-up and over your chin "zip!", with your hand above your head give a silent wave, then drop your hands back down to rest on your knees.

Breathing practice: Feel the sensation of your breath as it is right now without trying to change it...Maybe your breath is slow and steady.... Maybe it is quick and short.... Maybe its regular, maybe it isn't. All that matters is you pay attention to how it feels, without over thinking it, without doing anything at all other than just resting in the experience of just breathing (letting the cloud settle).

Discussion:

What did you notice? Did you keep your mind on your breath? Did your breath change as you practiced?

Just by observing/noticing it, it becomes deeper and slower, and the space between the in breath and the out breath grows longer. To extend this can notice what happens to your body and mind- they might begin to feel differently. Body tends to relax and mind to slow down and quiet.

Sometimes I can't concentrate on my breath without getting distracted about what I'm thinking or feeling. My mind doesn't slow down and my body doesn't relax. If I'm worried my breathing becomes short and fast. When you're thinking about something upsetting you're not concentrating on your breathing but on something else. So once you notice you are thinking about something else, gently shift your attention back to the breath and see if you start to feel better.

Homework: daily practice of Mindful breathing. Aim for about 5 minutes a day.

### **Week 3**

#### **Session 6**

Aim: to practice mindful movement

Now we are going to focus our attention on our bodies; increasing awareness of the bodily sensations as we move and directing our attention towards these sensations.

Too often we are not aware of our bodies and can feel quite detached from them. By focussing on our bodily sensations we can bring our attention back to our present experience; for example, we can practice mindful walking as we go about our daily lives.

By practising mindful movement we can become more aware of how our body is connected to our minds; we will become more aware that when we are upset about something this is accompanied by changes in our bodies. If we have things on our mind we can often rush about, might be more prone to bumping into things, or dropping things, we might forget to do things or behave in a more impulsive way.

When we focus our attention on our movements, this tends to slow our movements down, we tend to notice more how we are feeling and how this is affecting our bodies. It can also shift our attention away from our chattering minds, allowing the mind to rest and settle. It can also release stresses that build up in our in our bodies.

### **Activity 1**

Be as gentle as possible with yourself as the point is not to feel pain or discomfort. It is not a competition with yourself or anyone else so hold the stretch for as long as it feels comfortable, listen to your body and release the stretch when you're body tells you that it has reached the limit of what is comfortable. As we go through the stretches pay attention to the physical sensations, noticing any judgements you make about these and then gently guiding your attention back to the body.

*(Ask if pupils have any back problems before commencing)*

#### **1. Chair Cat-Cow Stretch**



Come to sit on a chair with the spine long and both feet planted flat on the floor.

On an inhale, arch your back and drop your shoulders. This is [cow position](#).

On an exhale, round your spine, letting the shoulder and head come forward. This is [cat position](#).

Continue moving between cow on the inhalations and cat on the exhalations for five breaths.

## 2. [Chair Raised Hands Pose - Urdhva Hastasana](#)



On an inhalation, raise your arms toward the ceiling.

Allow your shoulder blades to slide down your back as you reach upwards with your fingertips.

## 3. [Chair Forward Bend - Uttanasana](#)



On an exhalation, come into a forward bend over the legs.

Let the hands rest on the floor if they reach it. Let the head hang heavy.

On an inhalation, raise the arms back up over the head.

Repeat this sequence several times, moving with the breath.

#### 4. Chair Extended Side Angle - Utthita Parsvakonasana



After your final forward bend, stay folded.

Bring your left fingertips to the floor on the outside of your left foot.

Open your chest as you twist to the right on an inhale, bringing your right arm and gaze up to the ceiling. Hold here for several breaths. Bring the right arm down on an exhale.

If your left hand doesn't come easily to the floor, bring it to your left knee instead and twist from there.

For a more intense twist, bring the left fingertips to the outside of the right foot (pictured here) before twisting.

Do the same position with the right arm down and the left arm up.

#### 5. **Leg Lifts** - strengthen legs and lower back, and improves circulation to your legs and feet.



Sit and hold each side of the chair for balance. Breathe out and breathe in as you lift your straightened left leg and flex your foot. Hold for a few seconds and then slowly breathe out while lowering your leg. Repeat the same for your right leg.

#### 6. **Sun Pose** - improves circulation to your head, massages internal organs, and limbers your spine and hips.



Sit back in the chair with legs apart and arms by your side. Breathe out completely then breathe in and with a sweeping motion bring your arms up over your head. Look up and stretch. Breathe out while bending forward between your legs and if you can put your palms on the floor. Slowly breathe in while raising back up with arms over head again, then lower your arms to the side

### **Activity 2:**

Mirroring activity

Pupils work in pairs standing up facing each other.

One pupil leads the other copies. Movements can be fast or slow, smooth or jerky, rhythmic or random. Two pupils mirror each other as closely as possible.

### **Activity 3**

The "invisible ball" exercise is another playful exercise done in pairs. Two children select an invisible ball of any size, weight, and colour. They toss and catch this invisible ball to each other as quickly or slowly as they wish. Each child attends to his or her own and the other child's movements as they throw the ball back and forth. They strive to see the ball clearly, as if it were actually there.

Homework: practice mindful walking and continue practising mindful breathing

## **Week 4**

**Aim: To practice re-focussing on the present by paying attention to our breathing and body sensations**

### **Session 7**

Aim:

To practice focussing our attention on the body.

Raising awareness of links between mind and body.

Activity 1: Body scan (awareness of whole body)

(Adapted from Mindfulness; a practical guide to finding peace in a frantic world, by Mark Williams and Danny Penman, and Sitting Still Like a Frog by Eline Snel)

Mindfulness teaches you how to move out of your head and into your body. We will move our attention around the body, paying attention to each part of the body in turn, 'scanning' the whole body. Try not to judge bodily sensations as this will change your experience of them.

If I find myself feeling restless, agitated, bored, sleepy or avoiding a part of the body that I do not like, I use it as an opportunity to notice where in the body I experience this. Our bodies respond to emotions like shock, fear and happiness which can be a signal which tells us what we might need at that moment, or what how we might be feeling; for example, stiff shoulders, fast heart rate, knot in stomach, too tired to get up out of bed, or the opposite, jumping out of bed full of energy. Sometimes we ignore these sensations and push them to one side, may want to escape from them (e.g. comfort eating (bad habits), becoming withdrawn), or take our emotions out on someone else.

Body scan:

Close your eyes and mouth. If you would rather keep your eyes open, that's OK too. Bring your attention to your body. Feel the contact of your body with the chair. The Coolness of the plastic. Whatever you feel is OK.

Bring your attention to your left leg. How does your left leg feel right now in this moment? Does it feel hot? Cold? Itchy? Tense? Do you have trouble feeling anything at all? However it is feeling right now, just bring your awareness to it. If it is feeling tight or tense, see if you can soften it just a little. If that doesn't happen, that's OK too.

Just let the sensations be, and just bring your awareness to it. Whether you are experiencing a pleasant sensation, like relaxation or strength, or an unpleasant

sensation like stress or pain, whatever is happening to you is OK; you don't have to change anything.

If you have a sensation in your body, notice it. Watch it. How does it change when you bring your awareness to it? What happens? Does it get more intense? Less intense? What thoughts arise as you become aware of the sensation? What emotions arise as you become aware of the sensation?

You can simply observe what is happening in your mind and emotions and then bring your awareness back to the present moment, back to your body, with kindness and compassion for yourself.

[Repeat for all body parts: right leg, left arm, right arm, belly and chest, face.]

Now let your awareness spread throughout your entire body, allowing every part to be relaxed, feel heavy, soft, sinking into the chair.

When you are ready, you can slowly start to bring your awareness back to the room. There is no need to rush. You can start by wiggling your fingers...wiggling your toes...slowly open your eyes when you are ready.

Discussion points:

What did it feel like?

What sensations did you notice?

Did thoughts arise at any point?

Were any of the feelings attached to the thoughts about your bodily sensations?

Did you have any itches?

Was there an urge to move or scratch?

Can you describe the experience of sitting through the itch?

Extension Activity: Breathing practice (awareness of part of your body) (taken from *The Mindful Child*, p.74-75)

Crib sheet of **describing** words for bodily sensations

- Tender
- Sensitive
- Bruised
- Achy
- Sore
- Tense
- Tight
- Nauseous
- Shaky
- Trembly
- Throbbing
- Pounding
- Shivery
- Queasy
- Wobbly
- Bubbly
- Dizzy
- Breathless
- Prickly
- Tingling
- Nervy
- Twitchy
- Burning
- Itchy
- Congested
- Tense
- Cold
- Hot
- Warm

## Session 8

Aim: to bring attention to the body; how it feels and any emotional reactions that come up.

Activity 1; Slow and Silent Walking (*The Mindful Child*, Susan Kaiser Greenland)  
We will be paying attention to three main movements in Slow and Silent Walking: lifting the foot, moving the foot forward, and placing it back down. First paying attention only to the physical pressure on the soles of the feet when one foot steps on the ground. How does it feel to lift, move and place the foot down? You may find you slow down automatically, or you may find it difficult to slow your pace.

Activity 2; Move around the room as softly as you can, as if walking on eggshells or a fragile glass floor. Be aware of each movement you make- feeling the thigh muscle lift the leg and move it to the next position, feeling the foot coming off the floor and setting it back down, feeling your hands and arms in space.

[Extension; vary speed; moving faster or more slowly. Focus on your left leg for a few steps and then your right leg]

If thoughts begin to wander away from your body and their experience moving, note what you were thinking about, and return your attention to a part of your body (Hooker and Fodor (2008)).

Extension activity;

Ask pupils to think about this scenario- you are scared at night listening to noises of the house- creaking floor boards, a door hinge, heavy breathing..etc. How does this feel? What did you notice about your breathing? What parts of the body were you most aware of? What emotions or feelings did you have? Did you notice the effect these had on your body? What thoughts did you have? What effect (if any) did this have on the body? Does your awareness of your body change as you pay attention to it?

Week 5

**Aim: To practice noticing thoughts and how we react to thoughts.**

Session 9

Aim: to become more aware of our thoughts

(Sitting Still Like a Frog, by Eline Snel) Thoughts are like little voices inside your head. Some thoughts are about yourself: "I'm going to fail tomorrow's test" (invite pupils to think of other examples), some are about others: "That guy is such an idiot; he looks so sad" (invite examples). Thoughts and feelings tend to hang out together. Does the thought train ever stop?

Close your eyes and think of nothing for 15 seconds.

What do you notice? Do you keep thinking, "I'm not going to think of anything"? What were you thinking of?

You can't stop your thoughts and there is no need to. But we can practice ways to get off the 'thought train' and just see thoughts more like passing clouds, coming and going.

In pairs; one person is the interviewer, the other is the 'thinker' who observes the train of thoughts that arise in response to the questions. What thoughts pass by? Do images arise as well? Take 5 seconds to answer each question.

- What is your favourite food?
- What makes you really happy?
- What do you worry about?
- When you give your thoughts free rein, what are they about? (take 20 seconds)

We can get carried away with thoughts (getting on the thought train), or just observe them briefly before letting them go again (like watching the carriages on a train go by).

The next practice is useful for making us more aware of our thoughts and how they are linked to how we are feeling and bodily sensations. It is useful to practice when you are feeling under pressure or stressed, so you can see clearly any negative thoughts before they take control and you find yourself getting on the thought train.

3 minute breathing space (3MBS): A 3 step exercise. (remind pupils to make sure they are in an upright posture). Close/lower eyes.

Step 1- What am I experiencing right now? What thoughts are going through my mind? What feelings are here (just let them be, don't try to change them), what bodily sensations do I have right now?

Step 2- Now focus your attention on the breath in your abdomen...expanding (going out) as the breath comes in...and falling back as the breath goes out. Follow your breathing all the way in and all the way out. If your mind wanders, gently bring it back to the breath.

Step 3- Now bring your attention to the entire body; your sensations, your posture, and your facial expressions.

Discuss when this would be useful. How it helps to slow us down giving us space to make choices/think more flexibly rather than just reacting. Make 3MBS crib cards in preparation for homework.

Homework: Use 3MBS daily in situations where you feel under pressure. Write down what you notice each time about what you are thinking, what you are feeling and body sensations.

## Session 10

To explore how thoughts are linked to body sensations and feelings

### Practice 3MBS

Variation on the Mind Meter (adapted from *The Mindful Child*, p.143)

Pupils use non-verbals to signal how they are feeling in response to the following questions: (respond with arm raised in air, out sideways, or down by side)

Awareness of...	Ask...
Attention	are you focused, distracted, or in between?
Physical ease	is sitting still easy, hard, or in between?
Patience	do you feel patient, impatient, or in between?
Friendliness	do you feel friendly, unfriendly, or inbetween?
Interconnectedness	do you feel on your own, part of the group, or inbetween?

Adaptability                      do you feel interested, uninterested, or inbetween?

Wakefulness                      do you feel sluggish, energetic, or in between?

Relaxation                      do you feel tense, relaxed, or in between?

What do you worry about? We all worry from time to time. At times we doubt, fear or lack confidence. Sometimes our thoughts keep us awake at night. A lot of our thoughts follow a pattern. Our negative thoughts can arise out of habit.

Complete the following thoughts (on paper, can share if wish)

Beginning with "I sometimes worry about...":

- Being bullied, then I think...
- Not being good enough, then I think...
- Having an argument, then I think...
- Someone being really mad at me, then I think...
- Wanting to hurt others because they hurt me, then I think...
- Whether people like me, then I think...

Sometimes we notice our thoughts more when our bodies are relaxed and there are no other distractions, e.g. bedtime.

Can use the 3MBS to notice when you are worrying and then move out of the head and down towards the breath in the abdomen (there are no thoughts here).

Fuel fire analogy: the fuel is your thoughts and the fire is your feelings. So if you are thinking about failing a test the next day this can fuel your feelings of anxiety and fear with negative thoughts about the test, making you feel worse

(adding fuel to the fire). Through practising mindfulness we become more aware of when we are getting on the thought train, get better at letting go of our thoughts and this can help us manage our feelings better.

## Week 6

### Session 11

Aim: To practice letting go

(Revisit concepts of 'being stuck on the thought bus' and 'fuelling the fire'.)

Activity 1: Bubbles (or clouds) practice (from Teaching Mindfulness to Children, Hooker, K. And Fodor, I)

The purpose of this practice is to slow down, observe thoughts and let them go without judging. It's about observing our thoughts and feelings in a friendly way; so instead of "I am angry" the friendly observer sees that "I have an angry feeling".

*Begin by sitting in a comfortable position, with your back straight and shoulders relaxed. Close your eyes or half close them. Imagine bubbles slowly rising up in front of you. Each bubble contains a thought or feeling. See the first bubble rise up. What is inside? See the thought, observe it, and watch it slowly float away. Try not to judge or think about it more deeply. Once it has floated out of sight, watch the next bubble appear. What is inside? Observe it, watch it slowly float away. If your mind goes blank, then watch the bubble rise up with "blank" inside and slowly float away.*

Following this meditation pupils write some thoughts they had and would like to share with the group in bubbles. Discuss in group if thoughts are about past, present or future. Are they wishes or desires? Kind or unkind?

Discuss how thoughts and feelings are like visitors; they will leave eventually. We can respond to thoughts and feelings automatically (without thinking). Our behaviour has consequences, which we can't always predict. Practising

mindfulness gives us the opportunity to shift gears and do something else. To explore why you are choosing to act a certain way and if it doesn't feel right to choose to act differently. For example if acting in an unfriendly way, towards ourselves or others, can choose to shift gears to act in more of a positive way and is likely to make us feel better.



## Session 12

Aim: to practice visualising a 'safe haven' or safe place.

(Adapted from Sitting still like a Frog, E.Snel) Disappointment, sadness, wanting to be less lonely, or not seeing any light at the end of the tunnel- these are feelings that we all have from time to time. We can wish for things to be different from the way they are now. Wishes and desires are healthy but difficult too. They draw your attention to what you don't have rather than what you do.

We are all able to see pictures inside our heads with our eyes closed. Sometimes they are random pictures. Sometimes they are entire movies, making you feel as if you were in an inner cinema with someone else at the controls, switching the movies on and off again. You "see" yourself failing an important exam, or you "see" a creepy guy climbing through your window in the dead of night.

We are responsible for creating these images, often uncontrollably and out of habit. It's not the images themselves that can cause problems but the judgements we make about them. If your mind can produce scary pictures, can it also create nice pictures? Yes, we can create lovely, enjoyable pictures which can have a positive effect on our feelings.

Visualisation Meditation (from Teaching Mindfulness to Children, by Hooker, K. And Fodor, I.)

This meditation is to find a safe haven which can be used to help you at times when you are experiencing difficult times. It may also help you relax.

*Begin by sitting in a comfortable position, with your back straight and shoulders relaxed. Softly close your eyes. Allow the picture in your mind to become blank. You are going to imagine a place that feels comfortable, safe, and relaxing. Think of your place. It might be the beach, a lake, or even your own bed. Imagine it slowly appearing before you, becoming more and more clear. Look to your left. What do you see? Look to your right. What is over there? Look closer. Breathe in. What do you smell? Walk around your place. Look closer at certain things. Stay focussed on your place. How are you feeling? If you find your thoughts wandering, observe them, and then focus on bringing the image of your place back into focus in front of you. (Allow some time) When you are ready, put your hand in front of your eyes. Open your eyes. Slowly spread your fingers to allow light in. When you are ready, slowly remove your hand.*

Get pupils to draw the scene they imagined. This drawing can be saved to remind them of their safe, relaxing place.

Homework; Practice visualising your safe haven. Notice how it makes you feel.

APPENDIX 9: THEMATIC ANALYSIS EXCERPT

Student 1

	Data extract	Initial codes: cycle 1	Reflections	Cycle 2 codes	Themes	Sub themes
J A	What activities did you enjoy the most and why?	Favoured activities				
P 1	Erm I enjoyed the like three minute breathing exercise	Three minute breathing exercise		Three minute breathing exercise	Intervention	Aspects pupils liked
	'cause when I was like getting stressed and everything it	Times of stress/high emotion	'when I'- indicates specific times at which he uses mindfulness	Mindfulness to address specific problems	Perceived benefits and uses	Mindfulness for a specific purpose
	helped me calm down and stuff.	calming	Difficult to interpret what the 'and stuff' might mean- just surface level or did he notice	Help with calming down	Perceived benefits and uses	Calming, relaxing

			other benefits?			
J A	Ok that's good erm and so do you remember a particular time then when you used it and you noticed that it was good?	Times to use mindfulness				
	Um..when I was getting really angry at Fifa on Sunday?	Times of stress/high emotion	Meaning of 'getting stressed' (used earlier) and 'angry' might have been used interchangeably. Suggests that playing Fifa is a particular problem for pupil 1 (may also reflect why on SDQ 'leisure activities' was highlighted as a	Mindfulness to address specific problems	Perceived benefits and uses	Mindfulness for a specific purpose

			significant problem.			
J A	Right so that worked quite well to calm you down then?		Checking understanding			
	Yeah					
J A	Ok erm any other activities that you enjoyed?					
	Um I enjoyed the um the one where we like throw an invisible ball around. I like that one.	Movement activity	Enjoyed a particular activity in which movement was the focus. I got the impression that he may have 'enjoyed' this because it was fun.	Movement activity	Intervention	Favoured aspects
J A	Ok that was the mindful movement?					

	Yeah		Able to understand language specific to mindfulness and identify that it was a mindful movement activity.			
J A	Yeah ok. And which activities did you enjoy the least and?					
	Erm i don't know actually	Uncertainty	Uncertainty, perceived as needing scaffolding to answer. Activities may have been liked more than disliked. May struggle to remember his experiences of them all	Uncertainty  Difficulties answering question	Interview method	
J A	Maybe you felt a bit uncomfortable, or maybe you got a bit		Donating answers as a way to help him generate			

	bored..?		ideas, aid his memory of activities he didn't like			
	The um mirror exercise thing?					
J A	Mirror exercise?...					
	When someone had to do an action and someone else had to copy it.					
J A	What about that did you not like?					
	I just don't like copying people really.		Surface level- maybe not aware of why he didn't like it or wasn't able to articulate why he didn't like			

			it.			
J A	Was it because you had to stand directly in front of them?		Checking out based on knowledge of pupil (observations of social interactions in sessions, obs in classroom)			
	Yeah					
	Yeah so it was a bit awkward maybe?					
	Yeah	Awkward /feeling self-conscious		Self-conscious	Intervention	Issues
	Ok so what does being mindful mean to you?					
	Erm being able to um think about whats going on now and not whats going to happen later	Being in the present	This is a key mindfulness aim.	being in the present	Understanding of mindfulness	

J A	Uh hu. Anything else?		Checking out			
	Not really no		May not be able to articulate. May not be able to expand on answer due to the level of reflection this requires. Experience of mindfulness may be limited as a novice. Perhaps I should have asked for an example at this point.			
J A	Ok. Do you think mindfulness activities have been helpful?	Helpfulne ss of mindfuln ess				
	Yeah?					

J A	Yeah? In what way?					
	Like calming me down	Calming	Calming down is how mindfulness has been helpful. Not just an outcome but a helpful outcome.	Help with calming down	Perceived benefits and uses	Calming, relaxing
	when I get angry at Fifa and everything!	Specific times		Mindfulness to address specific problems	Perceived benefits and uses	Mindfulness for a specific purpose
J A	Yeah haha good					
J A	Erm have you noticed any differences in the way you think since completing this mindfulness course?	Impact on thinking				
	Erm ..					

J A	You may not have..					
	..no I don't think I have..		Comfortable to give honest opinions- not feeling coerced to give a particular response.			
J A	OK have you noticed any changes at school since completing the course?	Impact on school				
	Erm I've been concentrating like a lot more	concentration	Concentration on 'stuff that's been going on around me' sounds like an increased awareness of what is going on around him rather an improvement in the skill of			

			concentration.			
	on stuff that's been going on around me.	awareness		Increased awareness of environment	Perceived benefits and uses	Greater awareness
J A	Oh and do you find that that's helped then in lessons?	Helpfulness of mindfulness				
	Yep yep					
J A	And do you think that you'll practice mindfulness activities in the future?	Continuing mindfulness beyond sessions				
	[pause] erm probably yeah	uncertainty	May not know at this point	Uncertainty about use of mindfulness in future	practice	future practice
J A	Yeah? Ok. How important to you is practising mindfulness everyday to	Importance of practising mindfulness				

	get better at it?					
	Very important I think [unconvincing tone; sounded doubtful]	uncertainty		Uncertainty about daily practice	practice	Daily practice
J A	Yeah? And what do you think might get in the way of that?					
	Um like um distractions and like em having lots going on at the same time.	Lack of time	Mindfulness seen as something to schedule in, or that you need time for at least. Need to make time for it but get distracted with other things going on.	Difficulties finding time for mindfulness	practice	challenges
	Yeah how often did you manage to practice? Like					

	once a week, twice a week? Three times a week?					
	Um like once everyday		From response that follows it appears that he gave the view that he thought I wanted to hear, or maybe what he ought to be doing- or this was an honest answer!		Practic e	daily practice
J A	Good					
	Well not really everyday but every other day		Feels comfortable enough to change his statement. Maybe to a more realistic approximati on of how often he will practice	Difficulties finding time for mindfulne ss	practic e	challenges

			it.			
J A	That's alright that's good! You're onto a good thing there! Keep it up! Erm have you talked to anyone, family or friends about what you've done in the mindfulness sessions?	Integrating other systems (family, peers)				
	Er not really	Lack of conversations about mindfulness outside of sessions		Lack of conversations about mindfulness outside of sessions	Intervention	Integration with other systems
J A	OK					
	My mum like has a look through the practice log and everything to see whats going on	Parent looking at practice log	Practice log seen as 'evidence' by parent that their child is engaging in the programme	Parental interest in intervention	intervention	Integration with other systems

			? Parent interested in practice log/ programme			
J A	Yeah					
	But I don't really talk to her about it really	Lack of conversations about mindfulness outside of sessions		Lack of conversation about mindfulness outside of sessions.	intervention	Integration with other systems
J A	Ok. Have you used the practice log much?					
	Yeah a little bit	Low use of practice log	From conversation that follows after suggests pupil found picture aspect more useful, or more engaging than diary	Pupil not keeping record of practice	practice	Practice log

			aspect.			
J A	And have you found that it helps much?					
	Yeah					
J A	Um in what way does it help?					
	[yaws] sorry a bit tired					
J A	That's alright					
	Like looking at the pictures and everything and like looking at the picture with the dog and the man and everything	Picture aspect of practice log more engaging		Pictures in practice log a useful reminder.	practice	Practice log
	And it just helps me realise what's going on	awareness		Increased awareness of environme	Perceived benefits and	Greater awareness

	around me and stuff			nt	uses of mindfulness	
J A	Yeah and it sounds like it helps you understand about it a bit more?		Checking out that pictures in practice log aid understanding			
	Yeah					
J A	And have you talked to anyone else at school about the sessions? Has your tutor asked you about it?					
	No not really	Lack of conversation about mindfulness outside of the sessions.		Lack of conversation about mindfulness outside of the sessions.	intervention	Integration with other systems

## APPENDIX 10: ADDITIONAL ILLUSTRATIVE EXAMPLES

More examples for students comments linking to greater awareness of self and environment:

P5: Because I'm not very aware like before mindfulness kept running into my door because I don't concentrate and I keep running into the door but after mindfulness I've kind of stopped doing it now.

P4: I think maybe now I'll a bit more now I'll think before I speak and I'll realise what I'm doing a bit more

More examples for theme: mindfulness for a specific purpose:

P4 referred explicitly to her use of mindfulness for a specific purpose and that sometimes P4 perceived that there was more of a need for mindfulness than other times:

P4: Its-I think...I don't do it every day but I think when I can and when I really think I need to do it

P4: Yeah I think it helped to calm you down if you were a bit wound up and if you're just feeling a bit like you can't be bothered to do something you just do that and it brings you back motivated

More examples for theme: Calming and relaxing:

P6: Mindful Walking...I can do that all the time. Erm... it's relaxing.

More examples of theme: Improved concentration

Researcher: 'What does being mindful mean to you?'

P2: Concen-.er..more concentration

When asked if intended to practice mindfulness daily to get '*better at it*' P2 responded:

P2: it is fairly important to me so I -cause my parents are always saying to me 'oh you need to concentrate on your work...' and it's been helping me do that so it's fairly important for me

P5: Mrs XXX was talking about cells I noticed that I wasn't really drifting off as much as I do

## APPENDIX 11: COGNITIVE ABILITY PROFILE SCORES

(N- Not observed, 1- Not able, even with support, 2- Only able with support, 3- Sometimes able/Inconsistent and 4- Independently able).  
Green cells indicate positive change and red cells indicate negative change.

Group	ID	Attention AA								Behaviours Affecting Learning AB															
		AA1		AA2		AA3		AA4		AB1		AB2		AB3		AB4		AB5		AB7		AB6		AB8	
		BP	RI	BP	R1	BP	R1	BP	R1	BP	R1	BP	R1	BP	R1	BP	R1	BP	R1	BP	R1	BP	R1	BP	R1
A	1	4	4	4	4	N	4	4	4	N	N	N	N	N	N	3	4	N	N	N	N	N	N	3	4
	2	2	4	2	4	3	4	1	4	N	N	N	N	N	N	1	3	2	4	N	N	N	N	2	4
	4	N	N	2	3	2	3	3	3	2	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	5	4	4	4	4	4	4	4	4	4	4	N	N	4	4	4	4	4	4	N	N	N	N	4	4
B	6	2	2	2	2	2	N	2	N	3	2	N	N	N	N	3	3	1	1	N	N	1	1	1	1
	7	4	4	4	4	4	4	4	4	4	4	2	4	N	N	N	N	4	4	N	N	4	4	4	4
	8	4	2	3	3	N	N	4	3	4	4	N	N	N	N	3	3	N	N	N	N	N	N	N	N
	3	4	2	3	2	3	2	4	2	4	4	4	4	N	N	4	3	N	N	N	N	N	N	N	N

Key
<b>Cognitive Ability:</b>
AA1: Regulation of attention
AA2: Selective attention
AA3: Shifting attention
AA4: Sustained attention
AB1: Openness to intervention of adults
AB2: Openness to intervention of peers
AB3: Self-regulation of emotions including overcoming blocking
AB4: Self-regulation of movement
AB5: Motivation
AB6: Curiosity
AB7: Response to challenge

