

CARDIFF UNIVERSITY

Mindfulness in Schools

A mixed methods investigation of how secondary school pupils perceive the impact of studying mindfulness in school and the barriers to its successful implementation

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ABSTRACT

Research conducted into the effectiveness of mindfulness-based interventions has considered at length their application in treating a range of clinical disorders. More recently, work has identified such interventions as being potentially applicable within school settings as a method of supporting pupils' social and emotional development.

This study reports the results of a mixed methods investigation designed to explore how pupils from two secondary schools perceive the impact of studying 'mindfulness' as part of an eight-week school-based curriculum and the barriers to its successful implementation.

A range of qualitative and quantitative methods (online questionnaire, focus groups and in-depth interviews) were employed to capture the depth and breadth of pupils' experiences.

The data revealed distinct variability in pupils' perceptions, highlighting how various psychological, social and functional factors impacted their experience of the curriculum itself and the practices taught within it. The reported impacts of such factors are broadly consistent with those highlighted in previous research and the theoretical literature regarding mindfulness.

Pupils also described a number of issues preventing their engagement in mindfulness practice outside the classroom (e.g. a perceived lack of ability, forgetfulness and self-consciousness) and factors perceived to limit their impact (e.g. difficulty of technique, problems concentrating and the presence of environmental distractions).

The results of this study reinforce the need for detailed exploratory investigations of school-based mindfulness interventions to account for the complexity of pupils' experiences. Such information is considered to be of interest to a range of educational professionals and could help them to assess the potential value of mindfulness-based initiatives for secondary aged pupils. Limitations of the study and recommendations for further research are discussed herein.

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LIST OF NOMENCLATURE

Acronym	Definition
ACT	Acceptance and Commitment Therapy
ANOVA	Analysis of variance
ADHD	Attention Deficit Hyperactivity Disorder
BPS	British Psychological Society
CAMS	Cognitive and Affective Mindfulness Scale
DBT	Dialectical Behaviour Therapy
EP	Educational Psychologist
FOFBOC	Feet on Floor Bum on Chair
FMRI	Functional Magnetic Reasoning Imaging
GAD	Generalised Anxiety Disorder
KIMS	Kentucky Inventory of Mindfulness Skills
MAAS	Mindful Attention Awareness Scale
MAPs	Mindfulness Awareness Practices
MBSR	Mindfulness Based Stress Reduction Programme
MBCT	Mindfulness Based Cognitive Therapy
ME	Mindfulness Education
MiSP	Mindfulness in Schools Project
MQ	Mindfulness Questionnaire
NSF's	National Service Frameworks
OCD	Obsessive Compulsive Disorder
SPSS	Statistical Package for the Social Sciences
SEAL	Social and Emotional Aspects of Learning
TAF	Thought Action Fusion
TAU	Treatment as Usual
UK	United kingdom
US	United States

. b

Stop Breathe

CHAPTER ONE: INTRODUCTION

1.1. Purpose of Research

This research explores how secondary school pupils perceive the impact of studying 'mindfulness' in school and the barriers to its successful implementation. The findings set out herein are based on a retrospective exploration of pupils' experiences of an eight-week mindfulness-based curriculum delivered as part of their regular school timetable.

The research also examines individual and group based differences in order to understand the complexity of how such intervention may influence pupils. In light of the proposed influence of gender and socio-demographic on pupils mental health outcomes, particular attention is given to how such factors may influence pupils' perceptions on the present initiative.

A mixed methods design was used to obtain a rich dataset, capturing individual differences, social interaction effects and group distinctions within two school-based populations. Comparative data are examined based on pupils' gender and their inclusion in either mainstream state education or an independent fee paying school. Consideration is also given to how pupils' perceptions change over time.

Such an approach seeks to provide additional knowledge to supplement the currently underdeveloped and predominantly empirical literature examining the potential effects that mindfulness curricula may have for pupils in secondary schools. In addition, the study aims to advance current understanding by providing valuable information as to the barriers affecting pupils' engagement in mindfulness-based practices.

The findings of this research should serve to inform the development and delivery of school based mindfulness programmes and to further examine their potential applicability under the government led, Social and Emotional Aspects of Learning (SEAL) initiative (DCSF, 2007). The conclusions will be of interest to a range of professionals including programme developers, educational psychologists (EPs), teachers and the growing number of academics studying the underlying psychological processes associated with mindfulness and its potential effects.

1.2. Motivation for Research

In addition to the considerable academic requirements of secondary school, pupils face a multitude of intrapersonal and interpersonal challenges. As such, it can be argued that secondary education has a fundamental responsibility to help pupils face, overcome and transform such difficulties, creating the foundations for their future happiness and success.

However, the current prevalence of mental illness amongst children in British schools suggests that many pupils are overwhelmed and ill prepared for the social, emotional and scholastic challenges they face. In particular, adolescent male pupils from lower socio-economic demographics demonstrate particular vulnerability, displaying an increased prevalence in mental health problems (Green, McGinnity, Meltzer, Ford and Goodman, 2005).

In light of such findings, there has been an increased volume of research in the area of 'Positive Psychology' in an attempt to identify and promote the requisite skills pupils need to successfully traverse secondary education and later life (Seligman, 2009). A fundamental result of such enquiry has been the identification of the significant role that pupils' social and emotional development plays in fostering positive development.

In 2007, the British government introduced the SEAL initiative into British secondary schools (DCSF, 2007). The initiative encouraged schools to place increasing emphasis on pupils' social and emotional development and demonstrated the government's commitment to focusing resources to improve the social and emotional aspects of the curriculum taught to pupils.

However, recent research into the impact of the SEAL initiative has shown that it has had little, if any effect on pupils' progress (Wigelsworth, Humphrey and Landrem, 2010). Recommendations from this study identified the need for schools to pay closer attention to the evidence base of psychological interventions and to evaluate their progress more rigorously.

Such suggestions arguably call for enhanced collaboration between psychologists and educators to help identify, implement and evaluate theoretically based interventions in schools. In particular, they highlight an important role for educational psychologists in following current trends in psychological research and critically reviewing the emerging evidence base regarding pertinent interventions in order to provide quality support to pupils and schools. As an area of emerging interest in psychological research, mindfulness-based initiatives, arguably offer particular promise as a potentially beneficial addition to school curricula, supporting pupils' social and emotional development.

1.3. Issues Relating to School Based Mindfulness Programmes

Although 'Mindfulness' has its origins in ancient Buddhist traditions, its associated practices have more recently been operationalized within clinical interventions to treat disorders such as depression, anxiety and bipolar disorder (Baer, 2003).

Research carried out over the past twenty years has provided growing support for both the applicability and effectiveness of such interventions within clinical settings. It has also led to an increased theoretical interest in the potential processes and mechanisms underpinning the perceived effects that such practices may have. To date, work in this area has proposed a number of key processes such as enhanced attentional control, emotion regulation and cognitive processing (Brown, Ryan and Creswell, 2007).

In response to such claims, some researchers have recently become interested in the potential modification of clinic-based mindfulness interventions into school-based initiatives, focused on enhancing pupils' social and emotional skills and developing positive mental health (Wisner, 2010).

However it has been noted that the transformation of such interventions into a school-based format faces many challenges. In particular, creating a format that accounts for the attentional and physical capabilities of students requires particular consideration of the length and content of intervention and its constituent practices. In addition, programme creators need to identify an appropriate method and environment for delivery within an already busy curriculum. As such, it may prove difficult for initiatives to attain the correct balance between accessibility and effectiveness for pupils.

Research into school-based mindfulness initiatives is in the early stages of development and although interest is growing, there is still little knowledge regarding their effects for pupils. To date, what little evidence there is has emerged predominantly from the United States (US) and only one published article has come from work in British schools.

Huppert and Johnson (2010) implemented a four-week intervention with pupils (n=173) from an independent boys school in Southeast England. Although the intervention was reportedly well received by the pupils, no significant intervention effects were found on self-reported measures of mindfulness, wellbeing or resilience. In addition, the lack of follow-up data obtained in the research means little is known of the impact of the intervention subsequent to its completion. However, further analysis carried out on pupil data indicated that baseline levels of pupil wellbeing and agreeableness and the extent to which they practiced mindfulness in their own time significantly influenced student outcomes.

In light of these findings, it remains unclear to what extent practices modified from clinic-based mindfulness interventions can be applied in British secondary schools and to what extent the social environment of school influences the processes and impacts of such practices. In addition, a paucity of comparative data means that very little is known about how factors such as gender and socio-demographic influence the impact of such initiatives. Furthermore, prior research has failed to explore the potential barriers associated with such initiatives and how these influence pupil experience.

1.4. Issues Relating to the Context of the Current Study

The 'i.b' curriculum is an eight-week, psycho-educational mindfulness initiative for secondary aged pupils (Burnett, Cullen & O'Neill, 2011). The first of its kind in the Britain, it is a modified version of the well established Mindfulness Based Stress Reduction programme (MBSR), a widely used intervention within adult clinical populations.

The curriculum is a revised version of a similar initiative previously investigated by Huppert and Johnson (2010). It has been both extended in length and its delivery expanded to an increased number of schools from a varied demographic. The curriculum is taught by qualified teachers and experienced mindfulness practitioners and teaches pupils the principles of mindfulness as a concept in addition to a range of formal and informal mindfulness practices. Lessons are conducted for 45 minutes on a weekly basis and pupils receive an audio CD containing 8 x 3 minute mindfulness exercises to practice at home.

To date, the applicability of the curriculum has not been reported and little is known of its impact. Of particular interest is how the course will be perceived outside of the independent school system with pupils of mixed gender from a varied socio-demographic.

1.5. Issues Relating to the Chosen Methodological Approach

Previous studies of school-based mindfulness interventions are predominately grounded within a positivist epistemology. As such, they have sought to generate empirical evidence of the effectiveness of an intervention, based on the observed statistical differences between pupils' pre and post-test scores on a range of self-report measures.

However, it can be argued that applying such an approach within a real world setting serves to limit our understanding of the full complexity of pupil experience, reducing it into pre-defined categories and numerical descriptions.

To date, no published research in this area has considered the application of a constructionist approach to investigation and no in-depth qualitative methods have been utilised. As such, researchers have failed to explore how pupils themselves create and articulate meaning regarding the impacts and barriers of such an intervention within the highly social environment of school.

1.6. Overview of Chapters

In the succeeding chapters, consideration is given to the theoretical and methodological underpinnings to the research. The key findings are then presented and later critiqued with reference to existing literature and methodological limitations. Finally, conclusions are drawn and recommendations made for future research.

Chapter two (Literature Review) initially considers the fundamental purpose of education and discusses the proposed need for effective intervention within British secondary schools to support the social and emotional wellbeing of pupils. Consideration is given to the role of psychology and the function of educational psychologists (EPs) in supporting this process.

The development of school-based mindfulness initiatives is then reviewed and their potential inclusion within schools considered. Attention is then given to the study of mindfulness; both as a psychological construct and as an operationalized intervention. The existing research regarding mindfulness-based interventions with school aged children and adolescents is critiqued. Conceptual and methodological issues are discussed and gaps in the current literature base are identified.

Chapter three (Methodology) begins by presenting the philosophical assumptions underpinning the current research. Next, the historical, cultural and social context of the research is discussed and information is provided regarding the intervention procedure, its subject matter and its participants. The research questions are then presented and consideration is given to the methodological design employed. The strengths and weaknesses inherent within different forms of methodology are presented before the chosen data collection methods are discussed in detail. Finally a full description is given of the analytic techniques used to interpret and present the data collected.

Chapter four (Results) presents data pertinent to the study's research questions. To increase the explanatory power of the findings, analysis of both quantitative and qualitative data is integrated in the presentation of results.

In Chapter five (Discussion), consideration is given to the limitations of the research. The findings are then discussed in relation to the research questions and reference is made to the theoretical and empirical literature identified in the literature review.

Finally, Chapter 6 (Conclusion) offers a summary of the study's main findings and outlines its contribution to the current literature base regarding the impacts and barriers associated with the application of mindfulness based practices in secondary schools. Directions for future research are then discussed.

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview of Chapter

This chapter begins with a critique of current pedagogy in relation to the promotion of pupils' social and emotional development and mental health. Particular consideration is given to the theoretical and empirical evidence supporting the need for more effective intervention for secondary aged pupils.

The role of psychology and educational psychologists (EPs) is then discussed in relation to the identification and implementation of school based initiatives aimed at supporting the social and emotional development of pupils in secondary schools. Emerging from this literature, mindfulness and its potential operationalisation as a school based psycho-educational programme is outlined.

The later part of this chapter offers a critique of the existing literature related to the conceptualisation, measurement and operationalisation of mindfulness and associated meditative practices. Discussion is based on the perceived effectiveness of mindfulness interventions and the theoretical explanations proposed to underpin their impact.

Finally consideration is given to the limited study of mindfulness interventions with respect to child and adolescent populations. Predominance is given to research evaluating the potential operationalisation of mindfulness practices as a school based initiative. Throughout, substantive findings are critiqued in relation to their theoretical and methodological contributions to the field of mindfulness research.

2.2. Literature search

The sources used in connection with this review were primarily identified from academic databases using the Cardiff University electronic library service. The two main databases used were PsycARTICLES and PsycInfo.

Key word searches included the terms “mindfulness” “mindfulness meditation” and “mindfulness intervention”. Such phrases were also combined with the other key expressions such as: “school”, “children” and “adolescents”. The resulting articles were then filtered based on their pertinence to the review. In particular, school based studies in which only staff or parents were the recipients of intervention were excluded. In order to further explore the historical and social context of the identified literature, relevant references were identified from initial articles.

The main database searches for this research were carried out between September 2010 and Jan 2012. However, further searches were also conducted until the time of submission (May 2012).

2.3. The Role of Education

“Education allows us to be truly human. It deepens us and enables us to build a better society and a brighter future. The profundity of education determines the profundity of culture the nature of society and the firmness of peace”

Daisaku Ikeda (2006, p. 384)

With the spread of globalization and rapid developments in technology and communications, there is an arguably increasing demand for countries to produce highly skilled and capable workers in order to compete in a global market. To meet this need, numerous changes have been made over recent years to both the delivery and measurement of educational curricula to help raise academic standards in British schools (Department for Education, 2011).

However, it is argued that such developments have produced inflexibility in the content and delivery of curriculum and created a preoccupation with standardized testing. Claxton (2008) suggests that the high number of tests currently administered within British schools is leading to increased stress levels in pupils and is having a detrimental impact on their self-esteem and confidence. Similarly, McDonald (2001) suggests that pupils’ anxiety and concern over evaluation is a growing concern.

Claxton (2008) suggests that not only does current pedagogy lead to increased stress and anxiety for pupils, but that it may also be counterproductive to its aim of producing highly skilled and capable students. He argues that the mere accumulation of knowledge is not enough for pupils to succeed in such an increasingly unpredictable and rapidly developing age. Instead, Claxton (2002) calls for schools to encourage the development of pupils' "learning power", described as qualities of mind that enable children to adapt and apply their knowledge effectively and efficiently to meet the unpredictable challenges inherent within society.

In addition to academic expectations, pupils also face a myriad of challenges from within their families, with peers and in their wider social relationships. Pupils are often not only expected to cope with such challenging situations, but are often required to make important and long-term plans for their future whilst contending with them.

With its dominant focus on raising and demonstrating academic standards, it is questionable whether the current education system in Britain adequately prepares children to cope within an increasingly unpredictable and hazardous society and lead happy and successful lives (Morris, 2009).

Consequently, there is a growing call for a fundamental shift in both the content and delivery of curricula towards highlighting the central importance of developing pupils' psychological resources to enable them to negotiate life's stressors and flourish in today's society (Claxton, 2008).

2.4 Pupils' Mental Health in the UK

A growing body of mental health research provides further support for calls advocating a greater impetus within educational curricula on promoting psychological wellbeing and positive mental health in schools.

A comprehensive assessment of pupil wellbeing across 21 countries carried out by UNICEF (2007) suggested that British pupils are amongst the unhappiest in the western world. Fox and Hawton (2004), found that between 12 and 15% percent of school aged children are reported to have engaged in deliberate self-harm as a method of managing stress and negative emotions. In addition, Carr (2002) identified suicide as the cause of 30% of deaths in children and young people aged 15-24. Such findings have led to claims that youth suicide is a now a "major global public health issue" (Crowley, Kilroe & Burke, 2004).

A large-scale survey carried out by Green, McGinnity, Meltzer, Ford and Goodman, (2005) reported that 10 % of British children aged 5 -16 were diagnosed with a mental disorder. Of these children, 4 % had an emotional disorder such as Anxiety or Depression, 6% had a Conduct Disorder and 2% percent had a Hyperkinetic Disorder such as Attention Deficit Hyperactivity Disorder (ADHD).

Within this population, a number of individual and socio-demographic factors were found to influence the expression and prevalence of such disorders. In comparison to girls, boys were found to be at increased risk of developing externalised problems such as conduct and hyperkinetic disorder. In contrast, girls demonstrated higher rates of internalised emotional disorder such as anxiety and depression.

Pupils from lower socio-economic background were also shown to be at increased risk of mental disorder. A range of factors, such as household income, parental employment status and neighbourhood affluence were all identified as influential factors in the prevalence of childhood mental health issues.

A further large-scale review carried out in Scotland between 2001 and 2002 revealed a significant decline in the happiness, life satisfaction and confidence of children between the ages of 11-15 (Todd & Currie, 2003). Similarly, numerous mental health diagnoses (e.g. Social Anxiety Disorder, Panic Disorder, depression and substance misuse) have been shown to increase significantly during adolescence (Costello, Mustillo, Erkanli, Keeler & Angold, 2003).

Although such figures may be instinctively striking, to some, they merely reflect an attempt by authorities to highlight problematic behaviours and promote social order. Applying a social constructionist approach to mental health, Ungar (2004) suggest that the codification and categorization of mental illness does little to account for the function of behaviour for individuals and ignores the social context in which it is expressed.

2.5. Psycho-social development during Secondary Education

The early work of theorists such as Stanley Hall (1844-1924), Sigmund Freud (1856-1939) and Otto Rank (1884-1939) proposed a number of influential changes believed to occur during the transition from childhood through adolescence (Muuss, 2006).

Although each had a different theoretical perspective, they all described adolescence as a time of conflict, confusion and struggle against contradictory impulses. As such, it is perhaps unsurprising that adolescence is generally perceived to increase children's vulnerability to the negative effects of stressors and lead to the development of maladaptive coping strategies (Frydenburg, 1997).

In his theory of social and emotional development, Erik Erikson (1968) described middle childhood and adolescence as a crucial period in the development of 'self-identity'. He suggests that, during this stage of development, children rely less on their parents to guide their sense of self instead placing increased importance on their peers and social interactions.

Erikson proposed that, as the adolescent explores their independence and engages in self-exploration, they must overcome feelings of role confusion, which can lead to insecurity and uncertainty about themselves and their social and moral beliefs.

The transition of secondary aged pupils into adolescence has also been conceptualised as a period of rapid internal cognitive and emotional development (Dahl & Gunner, 2009).

In his theory of cognitive development, Piaget (1971) believed that, between the ages of 11-16, children enter the 'Formal Operations' stage of development. During this stage they become more capable of self-reflection and change from using behavioural coping strategies to cognitive, internal coping strategies. Aldwin (1994) argues that as children develop the ability to apply cognitive skills to monitor and regulate their emotions the resultant strategies may become ingrained and rooted in their lives. Strategies such as self-blame, rumination and catastrophizing may develop, which may have profound and lasting consequences on the way such children deal with negative life stressors across their lifespan (Garnefski, Kraaij and Spinhoven, 2001).

Further developments in cognitive and neuroscience research have shown both puberty and adolescence to be periods of profound brain development in which the brain becomes more efficient and specialized (Blakemore & Choudary, 2006).

One region, considered to be of key importance, is the lateral pre-frontal cortex, an area of the brain associated with 'executive control'. Key abilities associated with 'executive control' include the allocation of attentional resources (Browning, Holmes, Murphy Goodwin & Harmer, 2010), the ability to inhibit inappropriate behavioural responses and the capacity to exert mental flexibility in problem solving scenarios (Somsen, 2007).

Functional Magnetic Reasoning Imaging (fMRI) has provided evidence of reduced activation in the lateral prefrontal cortex of adolescents' brains during certain cognitive tasks when compared to adult participants (Crone, 2009). It is suggested that such findings reflect children's reduced capacity to exhibit skills associated with executive control. It may also underpin certain negative/harmful behavior observed throughout childhood, such as poor concentration and distractibility, poor behaviour regulation and risk-taking behaviour and the reduced ability to plan and organize.

However, cultural relativists such as Margaret Mead (1901- 1978) suggest that, although undoubtedly a period of dramatic biological change, the proposed emotional and behavioural correlates noted to occur during this period are heavily influenced by cultural and social expectations, norms and values. Consequently, it is argued that the expression of adolescence becomes meaningful in diverse ways dependent on social context (Saltman, 2005).

To illustrate this point, Ungar (2004) argues that although youth behaviour/conduct such as gang affiliation and drug and alcohol use may be seen as antisocial and maladaptive by some, they may equally be perceived as both functional and resilient responses within certain contexts, bringing about a sense of identity, control and acceptance.

It has also been suggested that the experience of adolescence may differ greatly dependent on an individual's gender. Perry and Pauletti (2011) identify that the differential cultural and social expectations placed on boys and girls means that the impact and expression of adolescence can differ greatly between the genders and impact the child's developing identity and life trajectory.

In support of this view, Copeland and Hess (1995) report significant difference in the coping strategies used by adolescent girls and boys in response to stress. Whereas girls were more likely to seek social support and engage in actual and cognitive problem solving activities, boys were more likely to engage in distraction-based activities and stress reduction techniques. Similarly, Broderick (1998) found that girls were more likely than boys to engage in ruminative strategies, repetitively focusing on the symptoms and potential cause and outcomes of their distress. This strategy has been found to be a key cognitive characteristic of individuals experiencing depression (Ingram, 1984).

More recent research by Eschenbeck, Kohlmann and Lohaus (2007) argues that social context may play an important role in the way the two genders employ different coping strategies. In a study of nearly 2000 young people in Germany, it was found that, whereas girls demonstrated a preference for social support as a coping strategy, boys preferred the use of more problem solving techniques and avoidant coping strategies. However they found that such gender differences were more pronounced in social scenarios rather than in an academic context.

In summary, the transition through childhood adolescence can be seen as both a complex and influential time in a person's life. As a period of biological, psychological and social change many believe that it is a vulnerable period in which children are particularly susceptible to environmental stressors and have difficulty coping effectively with the demands placed upon them. In addition, individual differences such as gender and socio demographic factors may be of particular importance to the individual expression and impact of this developmental period.

As a result, it can be argued that the secondary education system requires careful consideration to ensure effective support is given to pupils. Particular consideration should be given to pupils' cultural, social and individual differences to ensure that all are effectively supported and provided with the requisite support, skills and abilities to ensure their successful transition to adulthood.

To meet these goals it will be increasingly important for psychologists, researchers and educators to work collaboratively to help identify and promote the key factors associated with facilitating successful transitioning through adolescence.

In particular, educational psychology services may have a key role to play in the delivery, support and research of initiatives focusing on meeting these needs. Through the application of sound psychological principles, developmental theory and research evidence EPs can support schools to interpret, understand and make use of the relevant academic research and theory surrounding intervention (Boyle & Lauchlan, 2009).

2.6 Promoting Social and Emotional Learning in Secondary School

In recent years, research has highlighted a number of mechanisms and processes proposed to protect children from developing mental health problems (Schonert-Reichl & Lawlor, 2010). A central issue emerging in such research is the importance of social and emotional competence to child's ability to cope and thrive in later life (Greenberg et al., 2003).

Mayer, Caruso and Salovey (2000) identified a number of dimensions considered central to social emotional competence. Those of principal importance are skills such as 'perceiving and describing emotions', 'expressing emotions', 'effectively controlling emotions' and 'social problem solving skills'. Similarly, Goleman (1995) proposed 'self-awareness', 'self-regulation', 'motivation', 'empathy' and 'social skills' as key factors in his model of emotional intelligence. Research by Ciarrochi, Scott, Dean and Heaven (2003) has since provided evidence demonstrating the significant influence of each of these factors in predicting social and emotional health.

In light of such evidence, there has been increasing interest and developments from both researchers and educators suggesting that social and emotional skills can and should be taught within school settings (Durlak, Weissberg, Dymnicki, Taylor & Schellinger, 2011).

Over recent years a range of National Service Frameworks (NSFs) and government policies have emerged which are focused on promoting the social, emotional and psychological wellbeing of pupils (Department for Education and Skills 2005b; Ofsted 2005; National Institute for Mental Health in England, 2005).

Most recently, the Social and Emotional Aspects of Learning (SEAL) programme was developed from a primary aged initiative and introduced into secondary schools in the UK between 2007 and 2008. SEAL is:

a “ Whole-school approach to promoting the social and emotional skills that underpin effective learning, positive behaviour, regular attendance, staff effectiveness and the emotional health and well- being of all who learn and work in schools” (DCSF, 2007, p.4).

SEAL advocates a non-prescriptive framework based upon supporting factors identified in Goleman’s (1995) model of emotional intelligence. It is implemented at a number of levels, from a whole school level focusing on policy and wellbeing frameworks, to small group and individual level interventions. Although resources are made available, schools are actively encouraged to identify and implement their own chosen strategies dependent upon the structure and needs of the school (DCSF, 2007).

A recent review of the progress of the programme identified that it was implemented in approximately 70% of UK secondary schools. However, findings relating to its effectiveness identified that the programme had little effect on pupils’ social and emotional competence, their mental health or behaviour. Subsequent recommendations based on these findings call for schools to pay greater attention to the literature regarding the effectiveness of chosen interventions and to carry out investigation and evaluation before rolling out initiatives (Wigelsworth, Humphrey & Landrem, 2010).

In a similar criticism of current school-based initiatives in the US, Schonert-Reichl and Lawlor (2010) suggest that many classroom and school-based interventions are not based on scientific research and theory. In addition, interventions are considered too short in duration to have lasting effects and are not easily integrated within existing school structures and routines.

A further reason for the limited impact of such intervention is that the evaluation of a programme's success predominantly focuses on the reduction of negative outcomes rather than an increase in positive ones (Huppert & Johnson, 2010). It is suggested that in planning effective intervention it is important for programme developers to look at those factors that promote positive wellbeing, not just those factors that prevent mental ill health and negative outcomes (Seligman, Ernst, Gillham, Reivich & Linkins, 2009).

2.7. Positive Psychology in Schools

Over recent years there has been growing interest in an alternative approach to psychological research. In contrast to the traditional model of identifying and repairing psychological problems, 'positive psychology', as it has come to be known, focuses on identifying and fostering the positive aspects of human experience that serve to enhance functioning and lead people to flourish (Seligman, 2002).

There is current debate regarding the scientific rigor of such research and critics have argued that it is both culturally biased and ignores the philosophical conundrum of defining what is positive or negative (Miller, 2008).

Nevertheless, positive psychological research has been applied within various fields of society (Carr, 2004). In particular, it has attracted growing interest in the field of education (Miller, 2008). Seligman et al. (2009) suggest that by identifying and promoting skills and qualities associated with positive states, such as happiness, optimism, and resilience, school based intervention can achieve three important goals. Firstly, it can combat the manifestation of mental health problems. Secondly, it can enhance pupils' life satisfaction and thirdly, it can enhance pupils' learning and creativity.

An area of emergent interest in the positive psychological literature, with a potential application to education, is 'Mindfulness'. Described as a "fundamental attentional stance" (Kabat Zinn, 1982), 'Mindfulness' has been characterized as a receptive attention to, and conscious awareness of, one's "present experience". Underpinned by a non-judgmental and accepting orientation, it is proposed to enhance cognitive flexibility and emotional control (Crane, 2009).

Primarily cultivated by meditative practices, mindfulness has been operationalized within a number of psycho-educational training programmes aimed primarily at adult clinical populations. Although the current research base is criticised due to both methodological and theoretical limitations, research into the effectiveness of such programmes is progressing and it is arguably a promising area of research development (Davidson, 2010).

Mindfulness-based approaches have developed support as a popular psychotherapy and are perceived by some as being both applicable within a range of settings and effective in producing positive outcomes across a range of outcome variables (Baer, 2003).

In addition, research using self-report measures of mindfulness as a distinct psychological construct has suggested that it correlates negatively with mental health problems, such as anxiety and depression (Brown & Ryan, 2003). In addition, individuals with high levels of dispositional mindfulness have demonstrated enhanced regulation of emotions (Jiminez, Niles & Park, 2010), demonstrate greater task persistence (Evans, Baer & Segerstrom, 2009), sustained attention (Schmertz, Anderson & Robins, 2009), higher self esteem (Brown & Ryan, 2003) and are shown to experience more frequent positive emotions (Fredrickson, Cohn, Coffey, Pek & Finkel, 2009).

Although these findings suggest there are a wide range of psychological benefits associated with mindfulness, such research is criticised, both for its methodological limitations and for the complexity and ambiguity of defining and conceptualizing mindfulness as a distinct construct (Grossman, 2008).

In spite of its methodological and theoretical limitations, it has been suggested that introducing mindfulness to school aged children may be an effective strategy to help promote pupils' positive mental health, coping abilities and academic achievement (Wisner, Jones & Gwin, 2010). It has also been suggested that teaching pupils mindfulness-based practices could be a useful addition to the SEAL curriculum, simultaneously tackling a range of SEAL objectives with regards to learning, wellbeing and mental health (Jones, 2011).

Research in this area is in its infancy and preliminary steps are now being taken to investigate the applicability and effectiveness of teaching mindfulness-based practices to children and young people within educational settings (Huppert & Johnson, 2010).

2.8. An Introduction to Mindfulness

The concept of mindfulness has its origins in various Eastern meditative traditions (Baer, Smith, Hopkins, Krietemeyer & Toney, 2006). In particular, it has a great significance within the Buddhist religion and is considered by some to be at the heart of the Buddha's teaching (Thera, 1962).

Within Buddhist literature, mindfulness is generally conceptualized as a spiritual capacity, the cultivation of which is believed to lead one towards 'Enlightenment' or the cessation of repeated patterns of suffering (Crane, 2009).

Although different Buddhist schools may place varying emphasis on the different elements and practices of mindfulness, it is universally considered across all traditions to reduce suffering and increase wellbeing (Goldstein, 2002).

Kabat-Zinn (1982) explains how mindfulness practice differs with respect to alternative meditative techniques that seek to restrict one's attentional field (e.g. object or mantra). Rather than constraining attentional resources, mindfulness techniques are characterized by an openness to and acceptance of all conscious phenomena.

Williams, Duggan, Crane and Fennell (2006) suggest that the techniques used to cultivate mindfulness can be broadly split into two categories, namely, formal and informal practices.

Formal practices involve engagement in structured meditative exercises in which an individual systematically orientates and re-orientates the focus of their awareness and attention. This is commonly done by focusing on either one's breathing or on discrete parts of the body. Formal practices also include techniques involving the engagement in particular movements and postures such as walking, stretching and yoga.

In contrast, Informal mindfulness practices focus on the promotion of mindfulness within the routine activities of life. These may include for example, intermittent breaks and silences during daily activities in which an individual intentionally brings to attention their current internal or external experience.

2.9. Definition and Conceptualisation of Mindfulness

Due in part to the variety of practices used in its cultivation, mindfulness has proven very difficult to define and conceptualize within psychological literature. For years, ongoing dialogue between scientists and religious practitioners has sought to provide theoretical and operational definitions to allow for rigorous scientific investigation of the processes and mechanisms underpinning mindfulness and its perceived benefits (Bishop et al., 2004).

Brown and Ryan (2003) argue that mindfulness is a distinct psychological construct that is concerned with two of the primary dimensions of consciousness, namely, awareness and attention. Herein, awareness is described as a “monitoring system” which allows the conscious perception of physical and mental phenomenon. In contrast, attention is considered to involve the purposeful manipulation of such phenomenon into focus.

In a state of mindfulness, both one’s attention and awareness are focused on current experiences occurring either internally or externally. By maintaining one’s focus in the present, individuals are considered to remain protected from the impact of certain maladaptive processes such as rumination and anxiety associated with fixation on either past or the anticipation of future experiences. In contrast to other psychological constructs positing the importance of present focused attention (e.g. self-determination), it is argued that mindfulness can be distinguished by reference to the “quality or nature of attention deployed” (Brown, Ryan & Cresswell, 2007 p. 216). Mindfulness is concerned with the accuracy, rather than content, of one’s attention. Rather than seeking to control the content of one’s attentional field, mindfulness has been described as a “bare attention” of phenomena, which is devoid of conscious transformation or judgment. As a consequence, it is seen to provide clarity and objectivity to one’s awareness, promoting rational thought and conscious flexibility (Brown & Ryan 2003).

Bishop et al. (2004) suggest that a more accurate description of mindfulness requires the incorporation of an important additional component. They suggest that any definition should include reference to the adoption of a particular orientation or attitude towards one's experience. As such, they consider mindfulness to be characterized by an openness, curiosity and acceptance to all aspects of conscious experience. In response to this suggestion, Brown and Ryan (2004b) argue that this 'attitudinal' component is already subsumed within the processes of present attention and awareness.

In a further attempt to clarify the concept of mindfulness, Shapiro, Carlson and Astin (2006) make reference to an early-cited definition,

“paying attention in a particular way: on purpose, in the present moment, and non-judgmentally” (Kabat Zinn, 1994 p. 4).

Shapiro et al. (2006) refer to 3 distinct “axioms” found within this definition relating to the concepts of intention, attention and attitude and suggest these are central elements in understanding mindfulness. In addition to the role of attention and attitude outlined above, it is suggested that the cultivation of mindfulness cannot be separated from its goal or objective. Such objectives range from the enhancement of self-regulatory processes, to self-exploration and finally to complete spiritual liberation dependent on the motivation of a given individual. As such, the expression of mindfulness can be considered to some extent to be dependent on the context and motivation of the individual.

To date, there remains a lack of agreement over the exact definition of mindfulness, and it is suggested that further refinement of the concept is still required (Davidson, 2010).

2.10. The Measurement of Mindfulness

In connection with efforts to develop the definition and conceptualisation of mindfulness, a number of self-report measures have been created. Reflecting the diversity of the definitions proposed, a range of measures have emerged, each reflecting their own distinct conceptualisation (Baer et al., 2006). Such measures seek to enable researchers to isolate and assess the effects of mindfulness within individuals and across populations and to identify the factors associated with its expression (Van Dam, Earleywine & Borders, 2010).

An initial measure developed by Brown and Ryan named the 'Mindful Attention Awareness Scale' (MAAS; Brown & Ryan 2003), considers mindfulness as a distinct unitary construct. Designed as a 15-item measure, its questions focus on identifying the regularity with which respondents exhibit present focused awareness and attention in their lives.

Subsequently, three additional measures have become prominent within the literature. The Kentucky Inventory of Mindfulness Skills, (KIMS; Baer, Smith, & Allen, 2004), the Cognitive and Affective Mindfulness Scale (CAMS; Feldman, Hayes, Kumar, & Greeson, 2004) and the Mindfulness Questionnaire (MQ; Chadwick, Hember, Mead, Lilley, & Dagnan, 2005). In contrast to the MAAS, these additional measures consider that mindfulness is a multifaceted construct.

To examine the facet structure of mindfulness, Baer et al. (2006) conducted a factor analysis of the combined items of five mindfulness questionnaires. The results indicated five distinct factors assumed to underpin mindfulness; Non-reactivity, Observing, Acting with awareness, Non-judging and Describing.

However, critics of mindfulness measures have noted significant challenges to their construct validity. Van Dam, Earleywine and Danoff-Burg (2009) identify a number of problematic issues relating to the scale construction of measures. They suggest that there may be particular issues related to item interpretation. In particular they note the potential bias and different interpretation of negatively worded items between individuals and suggest that individuals that do/do not practice meditation may differently understand certain scale items.

An additional critique by Van Dam et al. (2010) is that all measures lack “construct representationalism”, that is they do not consider the psychological processes underlying individuals’ responses to questions.

In light of the debate regarding scale structure and construct validity, it is suggested that work is needed to achieve agreement and consistency in the conceptualisation and measurement of mindfulness (Grossman, 2008).

2.11. The Operationalization of Mindfulness with Adult Populations

Despite the lack of consensus regarding the definition, conceptualisation and measurement of mindfulness, the practices assumed to underpin its cultivation have grown in popularity in western culture (Baer et al., 2006).

Although religious in origin, it is argued that mindfulness is an inherent human capacity the cultivation of which should not be considered exclusive to Buddhists or religious practitioners (Kabat-Zinn, 2003).

Accordingly, over the past 20 years, many of the religious practices aimed at cultivating mindfulness have been formulated into secular based techniques thereby increasing their accessibility for people within a modern day western culture (Brown & Ryan, 2003).

The transmission of ancient religious mindfulness practices into an accessible format for people in a western society is largely due to the pioneering work of John Kabat-Zinn (Dorjee, 2010). His formulation of the ‘Mindfulness Based Stress Reduction’ treatment programme (MBSR: Kabat Zinn, 1982) was initially developed in a clinical environment (Massachusetts medical centre) and was focused on the application of mindfulness meditation to help alleviate chronic pain in hospitalized patients.

MBSR is a psycho-educational group-based intervention that incorporates both formal guided meditation and informal mindfulness techniques to help patients objectify and respond more positively to their pain (Kabat Zinn, 2003). MBSR usually involves 8 to 10 weekly sessions in which participants meet for approximately 2 hours during which they receive guided instruction in mindfulness meditation and engage in dialogue regarding apparent stress and relevant coping strategies (Baer, 2003).

Initial research into the effectiveness of the MBSR programme found it to be an effective intervention, producing long-term improvements in patients' ratings of chronic pain and general psychological symptoms (Kabat-Zinn, 1982; Kabat-Zinn, Lipworth & Burney, 1985; Kabat-Zinn, Lipworth, Burney & Sellers, 1987).

Due to its perceived effectiveness with patients experiencing chronic pain, the MBSR programme has more recently been applied in a range of clinical environments and its effectiveness has been explored in relation to numerous clinical disorders (Baer, 2003). Kabat-Zinn et al. (1992) investigated the impact of MBSR on patients suffering from Generalised Anxiety Disorder and Panic Disorder. Findings demonstrated significant patient improvements on measures of both anxiety and depression. Further research has found the MBSR programme to be effective in significantly altering mood and eating behaviour in binge eating disorder patients (Kristeller & Hallet, 1999). More recent research has demonstrated the effectiveness of the programme in reducing mood disturbances and stress levels in cancer patients (Specia, Carlson, Goodey & Angen, 2000), in reducing symptoms of anxiety and depression in patients with Social Anxiety disorder (Goldin & Cross, 2010) and in reducing symptoms of stress and improving sleep quality in outpatients with breast and prostate cancer (Carlson, Specia, Faris & Patel, 2007).

Although such findings suggest participants can derive substantial benefits from MBSR, it has been suggested that such research is limited by a number of methodological issues. In particular, there is a paucity of randomized control studies and a limited use of active control conditions from which to compare intervention effects (Irving, Dobkin & Park, 2009).

Despite such limitations, the perceived success of the MBSR programme became the catalyst for the development of additional therapeutic interventions utilizing mindfulness practice as a central component (Dialectical Behaviour Therapy (DBT: Lineham, 1993a, 1993b), Acceptance and Commitment Therapy (ACT: Hayes, Strosahl, & Wilson, 1999) and Mindfulness Based Cognitive Therapy (MBCT: Segal, Williams & Teasdale, 2002). Such interventions have since come to be known in the clinical literature as "Third Wave Therapies (Hayes, 2004).

In comparison to traditional models of psychotherapy (e.g. Cognitive Behavioural Therapy), which focus on modifying and replacing maladaptive thoughts, Hayes (2004) suggests that 'Third Wave Therapies' instead focus on altering people's relationships to their thoughts.

It is noted however that these therapies differ significantly from one another with regards to their target population, their length and their mode of delivery. It is emphasized that the therapies also differ with regards to the importance and formality of mindfulness techniques taught (Baer, 2003). It is suggested that ACT and DBT therapies place less emphasis on mindfulness techniques' shorter and more informal exercises (Baer, 2006).

The most prevalent of these approaches in the research literature is that of MBCT (Segal et al., 2002). MBCT was initially developed to help prevent relapse rates in patients suffering from clinical depression. The intervention integrates mindfulness practices within the traditional model of cognitive therapy (Crane, 2009).

Initial research into the effectiveness of MBCT supported its effectiveness in reducing depressive relapse in people who have experienced at least three previous depressive episodes (Teasdale et al. 2000; Ma & Teasdale, 2004). A further study carried out by Williams, Segal, Teasdale & Soulsby (2000) found that patients completing the MBCT intervention demonstrated a shift in cognitive style away from those associated with depression. More recently, research has also found provisional support for the effectiveness of an MBCT intervention as a treatment for chronic depression (Barhofer et al., 2009).

Criticism of such studies highlights the lack of randomized controlled experimental designs and active control groups. As such, it is suggested that further research needs to be carried out to reinforce current findings and to provide more rigorous evidence of the beneficial effects of such intervention (Grossman, Niemann, Schmidt, & Walach, 2004). However, a more recent meta-analysis of the controlled studies in the literature reported robust effect sizes for the impact of mindfulness intervention on both anxiety and depression (Hofmann Sawyer, Witt & Oh, 2010).

There is ongoing debate regarding such claims and some suggest that the lack of active control groups and differential operationalization of mindfulness reduces the credibility of such findings (Toneatto & Nguyen, 2007). As such, well-designed studies are needed to add clarity to the findings reported to date.

Despite the apparent critique of the intervention literature, support for and recognition of the perceived effectiveness of mindfulness-based approaches are rapidly growing both in scientific literature. Such developments are illustrated by the emergence of the journal 'Mindfulness' dedicated to research in the field.

Such growing popularity has led to the introduction and investigation of mindfulness programmes in fields as diverse as sporting performance (Kaufman, Glass & Arnkoff, 2009), pregnancy and childbirth (Beddoe, Lee, Weiss, Powell Kennedy and Yang (2010), relationship enhancement (Carson, Carson, Gill & Gaucom, 2004), parenting (Bazzano et al., 2010) and sleep disturbance (Britton et al., 2010).

2.12. Proposed Mechanisms of Mindfulness

In response to the growing evidence base regarding the efficacy of Mindfulness Based Interventions, research has more recently focused on investigating the potential mechanisms and processes that may underpin the perceived effects of mindfulness (Brown et al., 2007).

The development of self-report measures of mindfulness has allowed researchers to utilize both behavioural tasks and neuroimaging techniques to investigate the associations between self reported mindfulness and a number of cognitive, behavioural and neuropsychological processes. Such research enables researchers to further our understanding of how and when mindfulness meditation may be of benefit and to whom its application is most appropriate (Greeson, 2009).

For the purposes of this review, the literature in this area will be discussed with regards to five key processes; attentional processing; emotion regulation; cognitive control, behavioural regulation and relaxation. Although not an exhaustive list of factors, the processes discussed are chosen due to their prominence within the current theoretical literature (Brown et al., 2007).

2.13. Mindfulness and Attentional Processing

Brown et al. (2007) propose that the cultivation of mindfulness enhances one's ability to focus in on detailed features of stimuli whilst also allowing an individual to remain perceptive of a broader, more global perspective. Such processing is believed to increase one's control over peripheral information that can exert indirect impact on both automatic and controlled processing (Chambers, Lo & Allen, 2007).

It has been suggested that two distinct aspects of attentional capacity develop in relation to an individual's proficiency in mindfulness practices. Jha, Krompinger and Baime (2007) suggest that individuals are first encouraged to develop their ability to orientate and focus their attention on specific physical or mental stimuli. Following this, practiced individuals later develop a more receptive attentional capacity that has no focal point and is open to receptive stimuli.

Recent investigation of these claims has been largely based on Posner and Peterson's (1990) Tripartite model of attention. This model describes three distinct components of attention, alerting (remaining vigilant to unpredictable stimuli), orienting (directing and limiting attentional focus) and conflict monitoring (remaining focused despite distractions).

Jha et al. (2007) compared the attention-related behavioural responses of participants with no previous meditation experience completing an 8-week MBSR programme with experienced meditators engaging in a 1-month mindfulness retreat. Results were contrasted with a control group who had no meditation experience and received no intervention.

Prior to intervention, experienced mediators showed superior conflict monitoring to both the MBSR and control groups. Subsequent to intervention, the results showed that relative to the control group, those completing the MBSR programme demonstrated a superior performance on a measure of orienting. In contrast, following their retreat, the experienced meditators were found to perform better on a measure of alerting in which they were required to remain vigilant to incongruous presented stimuli.

However, further research carried out by Van den Hurk et al. (2010) found that experienced mindfulness practitioners performed significantly better than control subjects on similar measures of orienting but not alerting. Hence the findings offer mixed support for the proposal that training in mindfulness meditation enhances attentional control and that such attentional capacities develop differently as a function of meditation experience.

2.14. Mindfulness and Emotional Processing

In Buddhist literature, emotional regulation is considered a central aspect of mindfulness training. Ekman, Davidson, Ricard and Wallace (2005) suggest that the cultivation of mindfulness offers insight into the “true nature” of one’s emotions as transitory and impermanent, hence reducing their potentially harmful impact. Two key principles are noted to underpin this process; firstly, ‘non-attachment’ refers to one’s awareness of the pursuit of or clinging to meanings and values that do not exist. Similarly, “non-judgmental awareness” refers to one’s ability to be accepting and non critical of all aspects of inner experience.

In support of this view, a recent study carried out by Coffey, Hartman and Fredrickson (2010) found that two distinct facets of self-report mindfulness (‘Present Centered Awareness’ and ‘Acting with Awareness’) were associated with improved recognition of, and ability to deal with emotions. Similarly, Baer et al. (2004) found that the Observe and Describe facets of self report mindfulness (KIMS) to be significantly correlated with an improved awareness and understanding of one’s emotions and the ability to correct unpleasant mood.

Behavioural and neuroimaging studies have also provided some support for proposals of a positive association between mindfulness and emotional regulation. Using FMRI technology, Brown et al. (2007) found that participants with higher levels of mindfulness, as measured by self-report (MAAS), showed increased activity in the pre-frontal cortex and less activation of the amygdala during an affect-labeling task. The author’s interpretation of this finding is that mindfulness enables participants to “turn down” the impact of emotional experience.

Similarly, Farb et al. (2010) demonstrated a distinct neural response in participants' responses to sad stimuli following their completion of 8-weeks of mindfulness training. Although participants in both control and mindfulness conditions reported similar levels of self-reported 'dysphoria' in response to sad films, participants trained in mindfulness showed significantly less neural reactivity, particularly in brain regions associated with autobiographical memory retrieval and self-referential processing. As suggested by these findings, mindfulness may not prevent the occurrence of negative emotions; rather it arguably changes the way one experiences and responds when negative emotions arise.

Similarly, it has been argued that the aims of mindfulness are not to increase the frequency or intensity with which one experiences positive emotions. Rather, mindfulness seeks to provide clarity and insight into the nature of one's emotions and their fundamental causes. Such insight is considered to promote a balanced and healthy experience of both negative and positive emotion (Brown et al., 2007).

However, although not its aim, mindfulness has been strongly linked to the experience of positive emotions (Brown & Ryan, 2003). To illustrate this, Jiminez et al. (2010) found a significant correlation between participants' self-reported ratings of mindfulness and increased levels of positive affect.

In addition, early neuropsychological research in this area by Davidson et al. (2003) measured participants' emotion-related brain electrical activity before and after an eight-week mindfulness-training programme. Findings demonstrated a significant increase in left-sided anterior activation following mindfulness training, a pattern associated with the experience of positive affect.

2.15. Mindfulness and Cognitive Processing

Enhanced cognitive flexibility is considered to be a central mechanism through which mindfulness exerts its impact (Ramel, Goldin, Carmona & McQuaid, 2004). Kabat Zinn (1982) suggests that the cultivation of mindfulness enables one to recognize the content of thought as illusory and transient hence reducing the impact of harmful and habitual processes that can lead to suffering.

Similarly, Segal et al. (2002) suggested that mindfulness training enhances one's ability to identify the habitual thought patterns that serve to restrict our judgments and subsequent behaviours. In addition, it teaches one to relate to thoughts with a non-judgmental, accepting attitude, hence reducing their influence and increasing one's cognitive flexibility.

The cognitive effects of mindfulness within psychological literature have most commonly been discussed in relation to two processes, rumination and experiential avoidance.

2.16. Mindfulness and Rumination

Crane (2009) describes 'Rumination' as a cognitive response that arises from one's repeated analytical attempts to solve one's negative emotions. As such, it is a cognitive pattern that involves repeated judgments about how things should be, in relation to how they currently are. For one engaged in ruminative thought, reality tends to become the content of thoughts and one's focus becomes preoccupied with either the past or future. Rumination has been closely linked to mental health disorders such as depression (Noel-Hoeksema, 2000).

Brown and Ryan (2003) report an inverse relationship between self-reported levels of mindfulness and engagement in ruminative thinking patterns. They suggest that the present centered awareness characteristic of mindfulness serves to disrupt repetitive focus on either the past or future. Similarly, Wells (2002) suggests that an anchoring of one's focus towards the breath serves to reduce ruminative patterns of thought in individuals with Generalised Anxiety Disorder (GAD).

In addition to focusing on the present, Teasdale et al. (2000) suggest that rumination may also be reduced via the non-judgment and acceptance of all thoughts and feelings. Such an attitude is believed to decrease one's desire to reduce or alleviate negative feelings, hence lessening one's analytic attempts to do so.

Kumar, Feldman and Hayes (2008) offer experimental support for the effect of mindfulness training on rumination. They demonstrated that participants' increased levels of self reported mindfulness following training was significantly correlated with reductions in ruminative thought processes. Similarly, Jain et al. (2007) found significant decreases in participants' rumination following one-month mindfulness training. This decrease was shown to be significantly greater than that found in a control group completing Somatic Relaxation Training.

2.17. Mindfulness and Experiential Avoidance

Experiential avoidance is a process that occurs following the experience of an aversive emotional or cognitive experience. It involves a purposeful attempt to avoid or suppress the experience of certain thoughts or feelings due to the negative influence they exert. However, paradoxically, such attempts to suppress unpleasant experiences leads to an increase in their occurrence, sometimes even producing obsessional fixation on the very thought one is trying to eliminate (Wegner Schneider, Carter and White, 1987). As such, avoidance strategies are a common feature in mental health disorders such as Obsessive Compulsive Disorder (OCD) and Generalised Anxiety Disorder (GAD).

Kabat-Zinn et al. (1987) suggest that mindfulness leads to a reduction of intrusive thoughts, as individuals come to experience thought as an illusory and transient phenomena which there is no need to avoid or escape from. Similarly, Miller, Fletcher and Kabat-Zinn (1995) suggest that the non-judgmental acceptance of one's current experience cultivated through mindfulness training leads to a reduction in attempts to avoid or suppress negatively perceived cognitions.

In support of these claims, Hanstede, Gidron and Nyklíček (2008) found that participants who completed eight group sessions teaching a variety of mindfulness techniques demonstrated a significant reduction in OCD symptoms, in particular their ability to 'let go' of thoughts and the extent to which they showed Thought Action Fusion (TAF), which occurs when thoughts are believed to determine real action of thoughts. However, the results of this study are limited because of its small sample size (7 participants).

A further study by Bowen et al. (2006) investigated the impact of an intensive 10-day mindfulness retreat on alcohol use within a prison-based population. They demonstrated that participants who completed the course showed significantly less avoidance of negative thoughts, a process that partially mediated their reduced alcohol consumption. However, this was not a randomized controlled trial and the use of an incarcerated population reduces the generalizability of the findings.

In addition to research focusing on rumination and thought suppression, Garland, Gaylord and Park (2009) studied the role of positive reappraisal (the ability to reframe experience positively) in the impact of mindfulness on stress reduction. They found that following an eight-week mindfulness programme, self-reported increases in mindfulness predicted increased employment of positive reappraisal as a cognitive coping strategy. However, the lack of a control group in this study means that changes cannot be directly attributed to the training delivered.

Furthermore, Schütze, Rees, Preece and Schütze (2010) suggested that increased levels of self-reported mindfulness were negatively associated with an additional cognitive strategy, catastrophizing (the negative exaggeration of perceived experience) in the experience of pain. Similarly, low scores of mindfulness were found to uniquely predict catastrophizing.

2.18. Mindfulness and Behavioural Regulation

The connection between mindfulness and behavioural regulation can be seen in the Buddhist literature. In such literature one of the aims of meditative practice is to cultivate the 'right action' based on one's profound wisdom and compassion for others (Kumar, 2002).

In psychological literature it has been suggested that the orientation of one's attention to the present moment may play a crucial role in the regulation of one's behaviour. Brown et al. (2007) suggest that by increasing one's awareness of the present, an individual increases their potential behavioural repertoire due to an increased awareness and consideration of current goals and values, rather than merely by habit. It is argued that by developing an awareness of one's current internal experience it is possible to identify earlier signs of maladaptive emotional states, thereby enabling the employment of alternative coping responses (Teasdale, Segal & Williams, 1995).

As pointed out by Safran and Siegal (1990), merely being attentive to information on one's behaviour can lead to behavioural change. To illustrate this, Brown et al. (2007) note the research of Le Bel and Dube (2001) who found that merely focusing on the moment of eating chocolate made the experience more enjoyable for participants.

In addition, Shapiro et al. (2006) suggest that by inducing a re-perceiving of one's thoughts and feelings as transitory and illusory, mindfulness creates distance between one's experience and subsequent response. As such, it may serve to reduce habitual or automatic behavioural responses.

Brown and Ryan (2003) offer some evidence of the self-regulatory effects of mindfulness. They demonstrated that participants' levels of self reported mindfulness were negatively correlated with scores of impulsivity and positively correlated to scores of autonomy.

Lahey, Campbell, Brown and Goodie (2007) researched the relationship between levels of dispositional mindfulness and the severity of gambling outcomes in a group of frequent gamblers. The findings indicated that participants found to have higher levels of mindfulness demonstrated superior performance on two tasks designed to measure risk-related judgment and accurate decision-making.

Similarly, Evans et al. (2009) considered the relationship between the different proposed facets of mindfulness and task persistence in a laboratory study. They found that two facets of mindfulness (Non-judging and Non-reacting) were significant predictors of increased task persistence.

Further research into the effects of mindfulness training has provided preliminary support for its positive influence on a range of maladaptive behaviours, such as smoking cessation (Davis, Fleming, Bonus & Baker, 2007), eating disorders (Kristeller, Baer, & Quillian-Wolever, 2006) and substance misuse Bowen et al. (2006).

2.19. Mindfulness and Relaxation

Although relaxation is not considered to be the purpose of mindfulness meditation, it has been suggested that it is often an associated outcome, which may be of relevance in understanding the salutary effects it may have. It has been suggested that mindfulness practice may influence the functioning of both the automatic and neuroendocrine systems (Greeson, 2008).

Ditto, Eclache and Goldman (2006) found that engagement in a mindfulness technique known as the 'mindfulness body scan' resulted in decreased activity within participants' parasympathetic nervous systems. Furthermore, the observed decrease in activity was found to be significantly greater than those found in participants who used an alternative progressive relaxation response technique.

Similarly, Tang et al. (2007) found that participants who engaged in Integrative body-mind training incorporating mindfulness meditation exhibited significantly lower levels of cortisol in response to stress than participants given alternative relaxation training.

2.20. Mindfulness Intervention with Children and Adolescents

There is now a rapidly growing literature base exploring the concept of mindfulness, its operationalization as a clinical intervention and, most recently, the potential mechanisms underpinning its perceived effects (Brown & Ryan, 2007). In light of such investigation, researchers have recently started to focus on the potential application of mindfulness intervention for children and adolescents (Burke, 2010).

Predominantly based on the established adult models of Mindfulness Based Cognitive Therapy (MBCT; Segal et al., 2002) and Mindfulness Based Stress Reduction (MBSR; Kabat-Zinn, 1982), child based mindfulness programmes have sought to modify the operationalization of mindfulness techniques in order that they are developmentally appropriate. To do so, programme creators have needed to consider the attentional and physical capabilities associated with childhood and adolescence (Jha, 2005).

To illustrate, Burke (2010) highlights the differences between adult and child intervention with regards to the length of meditative practices. It is noted that, where during an adult session meditation may range from 20-45 minutes, child-based techniques rarely extend beyond 5 minutes in length. Such differences raise the question as to whether such techniques will exert any notable influence on children's mental functioning.

In addition, it is also noted child based interventions may face an additional challenge, namely maintaining client interest in the practices. It has been suggested that if sessions are perceived to be too boring then the engagement of the group may be quickly lost (Schonert Reichl & Lawlor, 2010).

In a recent review of the relevant literature, Burke (2010) identified 15 peer-reviewed articles reporting the application of mindfulness-based interventions with children and adolescents. Reflecting perhaps the historical context of these interventions, the majority of studies were carried out with clinical populations. Although limited by methodological weaknesses, findings from the reviewed studies suggested that such interventions were reasonably feasible and applicable for children, and reported positive effects for participants across a number of diverse outcomes such as attention (Zywloska et al., 2007), weight loss (Singh et al., 2008), aggression and externalized behaviour (Lee Semple, Rosa & Miller, 2008), and anxiety and social skills (Beauchemin, Hutchins & Patterson, 2008).

An early study carried out by Semple, Reid and Miller (2005) investigated the feasibility of a MBCT for anxious primary aged children. The study reports on the effects of a 6-week trial with 5 children identified by teachers and screened by a school psychologist as having significant levels of anxiety. The authors reported that the intervention was well received by four out of the five children and revealed a slight improvement in teacher-rated internalizing and externalizing problems for all children. Although demonstrating the feasibility of such a child-based intervention, the study was notably limited by its small sample size and the lack of a control group. In addition, the objectivity of staffs' ratings is questionable as staff were aware which pupils were engaged in an intervention.

Another early study carried out by Bootzin and Stevens (2005) delivered a 6-week MBSR based intervention to adolescent outpatients enrolled on a drug rehabilitation programme. The primary measures used in the study were self-reported sleep disturbance and worry. Findings indicated that, following intervention, adolescents reported significant improvements in both the quality and efficiency of sleep and self-perceptions of worry. However, there was a high non-completion rate and the study also found an initial increase in substance misuse relapse in a number of participants. These findings highlight the complexity of applying such intervention within an adolescent population.

Research has since provided additional support for the applicability of mindfulness-based interventions with a variety of child and adolescent groups. Singh et al. (2007) carried out a 12-week intervention with 3 adolescents with conduct disorder. Although findings were statistically insignificant, the intervention was reportedly well received by participants and was associated with reductions in the self reported aggression and non-compliant acts of participants. Similarly, Bogels et al. (2008) carried out a modified MBCT intervention with 14 adolescents diagnosed with a range of clinical disorders (Conduct Disorder, Oppositional Defiance Disorder and Autism Spectrum Disorder). Following intervention, participants demonstrated significant improvements according to an objective measure of attention. However, varied findings were observed with respect to self-reported behaviors, goals and subjective happiness. Again the study is limited by its small sample size and the lack of a randomized control design.

One study reporting the use of a randomized control design (Biegel et al, 2009) investigated the effect of a modified MBSR programme on 102 adolescents psychiatric outpatients aged 14-18. The interventions effects were compared against a Treatment as Usual (TAU) Control group. Significant improvements were found in clinicians' blind ratings of participants' mental health both immediately and at 3 and 12 months follow-ups. Findings also indicated that time spent meditating was a significant predictor of reductions in self-reported levels depression. Although no active control group was utilized, it is argued that these findings provide relatively strong preliminary support for the application and effectiveness of mindfulness practice with an adolescent population.

Aside from clinical based samples, recent child-based research using a non-clinical sample (Liehr & Diaz, 2010) offered children (aged 8-10) 15-minute mindfulness classes for a period of 2 weeks as part of a Summer Camp activity. 18 children took part and showed significant decreases in depressive symptoms over the course of the study in comparison to a control group following an alternative Health Education intervention. However, in addition to the study's small sample size, the use of financial incentives to complete the course raises further methodological limitations regarding its generalizability.

In summary, although child and adolescent interventions appear to be relatively well received by participants, the findings are far from conclusive and report a range of effect sizes. Similar to the limitations in early adult literature, a number of methodological limitations have been highlighted in the child based literature. Small sample sizes are a reoccurring theme and limited use of control groups (in particular, active control groups) (Burke, 2010). Research into the effect of mindfulness interventions for children and adolescents is a promising yet underdeveloped area of research. Future investigations will require the application of rigorous practical and analytic methods (Thompson & Gauntlett-Gilbert, 2008). In addition, there appears to be a lack of exploratory and, in particular, qualitative research available to understand the different effects and application of mindfulness techniques for children and how they may be compared to that found in the adult literature.

2.21. Mindfulness Interventions in Schools

In light of the perceived success of and growing interest in mindfulness interventions within the adult literature, together with preliminary findings from child and adolescent based research, more recently it has been the turn of educators to attempt to distill the ancient practices of mindfulness into an operationalized format for school pupils.

As noted previously, current government policy focused heavily on improving pupil mental health and supporting their social and emotional development (DCSF, 2007). As such, it has been argued that the transference of mindfulness initiatives to the classroom setting may be a cheap and powerful tool to meet such aims (Jones, 2011).

Some have claimed that such a move will wield numerous benefits for pupils, from reduced mental health difficulties to improved academic outcomes and social and emotional wellbeing (Wisner et al., 2010).

In contrast to the literature base in clinical settings, school based research offers a unique context in which to carry out psycho-educational interventions. Schools provide real world contexts in which the delivery of interventions and the measurement of its effects are subject to a range of confounding environmental variables.

Where the success of clinical based studies is based on clearly defined outcome variables related to the reduction or amelioration of particular clinical symptoms, research within the school population is perhaps more complex. Such research must account for a variety of social and contextual variables and often targets a broader range of positive and negative outcomes variables (Schonert Reichl & Lawlor, 2010). Preliminary research emerging predominately from the US has begun to investigate the potential feasibility and impact of integrating mindfulness practices into the mainstream classroom (Broderick & Metz, 2009). A limited number of mindfulness programmes have been developed to attempt to create an accessible format for school pupils. However, the integration of such programmes has to contend with a range of environmental factors such as school timetables, peer group effects and teacher opinions.

2.22. Mindfulness Research with Primary aged Pupils

Initial research with primary aged pupils focused mainly on the development of pupils' attention skills. Napoli, Krech and Holley (2005) investigated the impact of a 24-week intervention (The Attention Academy Program) with pupils in two different elementary schools. Pupils received 12 x 45-minute mindfulness sessions on a bi-weekly basis delivered by trained mindfulness instructors.

The findings revealed that, compared to a control group receiving no intervention, pupils completing the mindfulness intervention showed significant improvements on an age appropriate measures of selective visual attention and teacher-rated problems related to pupil attention in class. As noted by the authors, the study is limited by the absence of a prior testing for naturally occurring differences between the groups. In addition, the study did not employ an active comparison group and so conclusions related to the intervention content are limited.

More recently, Flook et al. (2010) investigated the use of Mindfulness Awareness Practices (MAPs) in a sample of 64 pupils aged between 7 and 9. During the 8-week intervention, pupils received instructions in a variety of mindfulness practices for 30 minutes twice a week. Pupil outcomes were measured using teacher and parent reported measures of emotional control and executive functioning. Although group main effects were found to be statistically insignificant, pupils in the intervention group with low baseline measures showed significantly more improvement in emotional control and executive functioning than those in the control group.

A recent unpublished pilot study carried out by Brown and Biegel (2011) researched the outcomes of a 5-week mindfulness intervention with 79 elementary aged pupils. Pupils received 3 x 15 minute sessions a week. The authors report “dramatic increases” in pupils’ objectively measured attentional skills and teacher rated social skills. The study is limited, however, by a lack of control school or active control group for comparison.

2.23. Mindfulness Research with Secondary aged Pupils

As discussed, the research regarding the use of mindfulness with primary aged pupils identifies both the applicability and potential benefits of school-based mindfulness interventions, particularly with regards to pupils’ attentional skills.

In comparison, research with secondary aged pupils has arguably been less focused with regards to its targeted outcomes. In many cases, interventions have been employed to target the development of broadly defined emotional concepts such wellbeing and social and emotional competence (Huppert & Johnson, 2010; Schonert-Reichl & Lawlor, 2010).

Broderick and Metz (2009) investigated the effectiveness of the “Learning to BREATHE” mindfulness curriculum. This intervention provided pupils with 6-weekly mindfulness sessions taught within the classroom as part of a health based curriculum. The participants were 120 girls (aged between 17 and 19) from a private girls school in the USA. In comparison to a control group, participants’ self-reported responses demonstrated a significant reduction in levels of negative affect and significantly increased feelings of calmness, relaxation, and self-acceptance. Participants also reported significant improvements in emotion regulation and reduced tiredness following the intervention. Results from responses to a semi-structured questionnaire also indicated high levels of pupil satisfaction with regards to the intervention.

Although such results appear promising, the study is limited by the homogeneity of its target population (all female and privately educated). The validity of the findings are limited by the fact that participants in the control group were of a different age to those in the intervention group. Hence, group differences can arguably be explained by maturational differences.

Research carried out by Schonert-Reichl and Lawlor (2010) investigated the impact of the Mindfulness Education (ME) programme, a school based intervention delivered in 12 schools in Western Canada. The intervention focused on developing the social and emotional competence of pre and early adolescent pupils (aged between 9 and 14). The Ten-lesson ME curriculum focuses on four key components; ‘quieting the mind’, ‘developing mindfulness attention’, ‘managing negative emotions and thoughts’ and ‘self and others’.

The study found that pupils completing the 10-week programme demonstrated significant increases in self-reported optimism in comparison to a control group (wait list). Additional analysis also found that pre-adolescents who completed the intervention reported significant improvements in their general self-concept. However, in contrast, early adolescent ratings identified adverse effects of the intervention on pupils’ general self-concept. The results of teacher ratings provided further support for the effectiveness of intervention. Pupils completing the course were rated more favorably than those in the control group on measures of attention and concentration, social emotional competence, aggression and oppositional / dysregulated behaviour.

These findings are limited, however, by the sole use of teacher report measures for rating social emotional competence and also by the lack of an active control condition to distinguish the true impact of the intervention. In addition, the lack of longitudinal data makes it difficult to identify longer-term effects post intervention.

Research by Barnes, Davis, Murzynowski and Treiber (2004) investigated the physiological impact on pupils of engaging in 10-minute mindfulness breathing meditation sessions at home and school for 10 weeks. In comparison to participants in a control group who followed an alternative health education programme, those engaging in the mindfulness sessions showed significantly lower blood pressure and resting heart rates, both of which are shown to be predictors of heart disease in later life.

2.24. Mindfulness Research with Special School Populations

A further group of school-based studies has employed mindfulness interventions within special school populations. In a study of adolescent pupils with learning difficulties, Beauchemin et al. (2008) reported significant improvements on an objective measure of pupil attention, self-rated anxiety and social skills and on teacher rated social skills and academic achievement following the intervention. However, the study's lack of a control group and its small sample size again limits the value of these findings.

An unpublished doctoral thesis by Wisner (2008) looked at the impact of introducing mindfulness meditation to pupils within an alternative high school for "at risk" pupils in the US. An analysis of teacher ratings demonstrated that pupils showed significant improvements on a range of behavioral and social and emotional measures following the intervention.

Further analysis of data obtained from pupils' responses to open-ended questionnaires and their diary entries found that pupils perceived the intervention as helpful in improving their self-regulation, inducing a sense of calm and relaxation (both personally and in the school), alleviating stress and improving emotional regulation. They also reported being more self aware and more able to control their thoughts.

Analysis of qualitative data also revealed a number of challenges facing pupils seeking to practice mindfulness in school. These included having negative preconceptions about meditation, having difficulties focusing due to the presence of environmental distractions (e.g. noise) and tiredness.

2.25. Mindfulness Research in UK Schools

To date there has been only one published study investigating the incorporation of a mindfulness-based intervention in a school in the UK. Huppert and Johnson (2010) investigated the effects of a 4-week school based mindfulness intervention based on the MBSR model. Male pupils (N=134) aged 14 and 15 from two independent fee-paying private schools received 40 minutes sessions once a week for four weeks. Sessions focused on teaching both the principles and practices of mindfulness and were delivered as part of the religious education curriculum. Pupils also received a home practice CD with 8 x 3-minute mindfulness exercises for use outside of the classroom. Pupils completed pre- and post-test questionnaires measuring mindfulness, resiliency, well-being and personality type.

Initial findings indicated that the intervention had limited effect on pupils and was rarely practiced outside the classroom. However, due to the exploratory nature of the study, the authors conducted post hoc analysis exploring the marginally significant impact of intervention on wellbeing. Such analysis identified that practice of the techniques had a significant effect on changes in pupils' wellbeing. It was found that the more pupils engaged in mindfulness practice at home, the greater their increase in wellbeing.

The authors also found that the pupils' personality had a significant effect on the impact of the intervention. Pupils who had high self reported agreeableness and low self reported emotional stability showed greater increases in wellbeing following intervention. These findings suggest that pupils considered in most need of intervention may be those who gain the most from it.

The generalizability of these findings is limited by the fact that all participants were male and were from an unrepresentative demographic (white middle class, privately educated). Furthermore, the groups were not randomly allocated and were taught by different teachers. As a result, a number of confounding variables, such as pre-existing group influences and environmental experiences considerably limit the conclusions that can be drawn from the research. In addition, the lack of an active control group makes it difficult to isolate the distinct effects of meditative practices.

In light of the limited statistical evidence and numerous methodological limitations of this study, it is difficult to advocate any support for claims that the intervention has beneficial impacts on pupils. However, the identified impact of personality and rate of home practice indicates that future research could usefully target and seek to expand on this topic discovering more about the impacts of, and the barriers to, pupils' engagement in mindfulness practice.

2.26. Summary of Current Mindfulness Research in Schools

The research published to date investigating the impacts of school-based mindfulness initiatives supports the contention that such initiatives are feasible and suggests that they may be appropriate and effective as school based interventions (Wisner, 2010).

However, research in this area is still in its infancy and a number of theoretical and methodological issues limit the conclusions that can be drawn (Huppert & Johnson, 2010). As highlighted by Burke (2010), the majority of studies using child and school based samples have been poorly designed, reporting quantifiable improvements on self report and teacher report outcome measures but without the use of matched or active control groups.

To date there have been only three peer reviewed studies reporting the effects of a mindfulness based intervention in mainstream schools for secondary aged pupils. As such, little is currently known about the applicability and impacts of such intervention within this population.

To date, only one study has been carried out in the UK. Due to the cultural and pedagogical differences between the US and UK there is a gap in knowledge of how such interventions are received in UK secondary schools. Furthermore the use of highly heterogeneous samples in a number of cited studies means that little is known about the differential impact of such interventions dependent on individual and factors such as, gender and age.

As highlighted by Huppert and Johnson (2010), pupil personality and the regularity of home practice may be important factors in describing the effects of mindfulness. As such, it is entirely conceivable that interpersonal and social factors such as school context, peer relationships and pupil attitudes may also exert considerable impact on the outcomes of intervention.

There is a currently a paucity of published articles reporting in-depth qualitative data with regards to the impact of such school-based interventions. However, such research would arguably provide important information regarding the individual, interpersonal and socio-cultural influences on pupil outcomes. In addition, it may allow insight not only into the applicability and effects of intervention, but also into the barriers preventing pupil engagement or limiting the effects of intervention.

2.27. Conclusions Drawn From Review of Literature

It is proposed that the literature discussed in this review identifies and illustrates the need for secondary schools to collaborate closely with professionals such as educational psychologists to deliver effective interventions, thereby supporting the social and emotional development of pupils.

In light of the currently limited support for the government endorsed SEAL programme (DCSF, 2007), it is contended that more evidence is needed in order to better understand the impact of, and barriers to, the effective implementation of school-based initiatives.

Currently, the volume of research relating to mindfulness and its associated practices is growing rapidly. A number of studies have indicated that various benefits may be linked to the cultivation of mindfulness.

The findings from research carried out by Jha et al. (2007) suggest that significant improvements can be observed in individuals' attentional capacities following only a relatively short period of mindfulness practice (8-weeks). These results have also been replicated in school-based studies, which have reported attentional benefits for pupils following mindfulness training in the classroom (Bogels et al., 2008; Napoli et al., 2005).

Evidence obtained from neuropsychological studies (Davidson et al., 2003; Farb et al., 2010) also suggests that mindfulness training can lead to distinct changes in the way individuals' process emotions. These studies found that after only minimal exposure to mindfulness training, participants' demonstrated patterns of neural activity associated with the effective regulation of negative emotions and increased positive affect. Consistent with these findings, the results of recent educational research (Biegel and Brown, 2011; Liehr & Diaz, 2010) suggest that mindfulness training has contributed to the manifestation of positive changes in the way pupils' manage their emotions.

An increasing volume of evidence emerging from clinical studies also indicates that mindfulness training is associated with a reduction in the use of cognitive strategies such as rumination (Kumar, Feldman & Hayes 2008; Jain et al. 2007) and thought suppression (Fletcher and Kabat Zinn, Bowen et al.), which strategies are generally associated with the presence of clinical disorders such as depression and anxiety. However, as yet there is little evidence of any such cognitive changes in pupils learning mindfulness in school.

In addition to the proposed cognitive and emotional changes associated with mindfulness training, there is now growing evidence to suggest that mindfulness training can also effect behavioural changes.

Laboratory research conducted with adult subjects has reported positive changes in individuals' levels of task persistence (Evans et al., 2009) and risk taking behaviour (Lahey et al., 2009) following engagement in mindfulness training. Similarly, findings from clinical studies have also demonstrated reductions in maladaptive behaviours such as smoking (Davis et al., 2007) and substance misuse (Bowen et al., 2006) as a result of mindfulness training. This evidence is supported further by the findings from recent school-based studies that have found a reduction in the level of pupils' aggressive behaviour (Schonert-Reichl & Lawlor, 2010) and non-compliance (Singh et al., 2007) following mindfulness training in school.

Relaxation has also been identified as an associated outcome of practicing mindfulness (Greeson, 2009). In support of this opinion, studies measuring participants' physical responses to stress following mindfulness training have indicated that such training may have a positive impact on their parasympathetic nervous systems (Ditto, Eclache and Goldman 2006) and cortisol response (Tang et al., 2007).

Again, preliminary evidence from school-based research (Barnes et al., 2004) supports these findings and demonstrates a significant reduction in pupils' resting heart rate and blood pressure following a period of mindfulness training. Furthermore, evidence from a number of self-report studies has identified relaxation as a perceived outcome of mindfulness training in school (Broderick & Metz, 2009; Wisner, 2010).

In light of these findings it has been suggested that mindfulness-based interventions may be well placed to provide pupils with the psychological skills and resources they require to succeed within a secondary school setting.

However, studies carried out to date with children and adolescents and within school-based populations are limited by various methodological problems and, as yet, provide limited support for such claims. As such, further studies utilising well-designed methodologies are needed to develop a better understanding of the value of such interventions in UK secondary schools.

In addition, the distinct lack of consensus regarding an operationalized definition, conceptualisation and measurement of mindfulness makes it difficult to attribute any beneficial outcomes from intervention to the impact of mindfulness per se. Consequently, it may prove valuable to incorporate more constructionist based research in this area exploring how contextual factors and individual differences influence the perceived impact of and meanings attributed to the practice of mindfulness and the experiences of mindfulness-based interventions.

CHAPTER THREE: RESEARCH DESIGN

3.1. Overview of Chapter

The current chapter provides both a rationale for, and description of, the research design used in the current research. Consideration is given to the philosophical, methodological, practical and ethical issues associated with the current study.

3.2. Epistemological Framework of the Current Study

Crotty (1998) defines 'epistemology' as "the theory of knowledge that defines what kind of knowledge is possible and legitimate". As such, the philosophical assumptions of one's epistemological position are considered to inform all subsequent procedural decisions placing it as the primary element in the research process.

In light of this view, Darlaston-Jones (2007) argue that for research to be truly meaningful it is crucial that researchers are explicit regarding the epistemological foundations of their investigation and how this informs the experimental design and individual methods used.

The epistemological position of the current research is that of 'Social Constructionism'. Burr (2003) identifies Social Constructionism as a theoretical orientation almost exclusively discussed within psychological literature. Although no defining feature or single definition is offered, Burr (2003) identifies a number of commonly held assumptions advocated by adherents to the approach. Firstly and most crucially, Social Constructionists are highly critical of Positivist and Empiricist approaches that view human knowledge as a reflection of a universal objective truth, which is either directly observable or quantifiable.

In contrast, Social Constructionism argues that human knowledge is fundamentally dependent upon and shaped by, the historical, cultural and social context from which it is expressed. As such, Constructionists view social processes as the source of knowledge and understanding rather than being a result of direct experience.

Due to its focus on social interaction, Constructionism also places central importance on the role of communication and language in how meaning is created. In a description of this position, Gergen (1999) advocates that reality is socially constructed both by and between the persons who experience it.

Social Constructionism has gathered substantial support over recent years and has increased its influence on psychological research (Willig, 2001). In comparison to more established models of psychological enquiry, it can be seen to offer a radically different perspective on the nature and purpose of scientific investigation (Gergen, 1985).

Rather than seeking the discovery of universal truths via objective 'scientific' enquiry, Constructionism advocates the importance of considering the diverse interpretations and meanings that are given to explain phenomena (Burr, 2003). As such, its claims are not generalisable, as constructions may vary widely between individuals, even those with similar personal characteristics. By advocating the existence of multiple, equally valid realities, Constructionism offers somewhat of a paradigm shift away from the idea of scientific progress and development (Berger & Luckman, 1966).

Constructionism demonstrates further divergence from traditional investigation with respect to the role of the researcher. Whereas Positivist approaches seek to control extraneous variables and provide an objective account of phenomenon, in Constructionist investigation, the researcher must relinquish any notions of personal objectivity (Burr, 2003).

Instead, the researcher is viewed as an active agent in the research process, both influencing and being influenced by the phenomenon they seek to explore. Just as the knowledge of participants reflects their social, cultural and historical context, the researcher is bound by the very same influences. As Burr (1995 p. 30) states, "*no human can step outside their humanity and view the world from no position at all, and this is just as true of scientists as of everyone else*".

By outlining the underpinning epistemology of the current research, the author hopes to provide a contextual lens through which to examine and interpret its aims, methods and findings. Adherence to a Constructionist orientation means that one's commitment is not to uncover universal truths or make generalized claims of the wider population. Instead, its aim is to explore the subjective meaning and interpretations of a range of participants and to acknowledge both the role of the researcher and the influence of interactive and group processes in the creation of knowledge and meaning (Willig, 2001). Such an approach seeks to provide a richer and more exploratory description of phenomena that captures the complexity and multifaceted nature of the chosen subject matter.

3.3. Background Context of Research Design

In light of its adherence to a 'Social Constructionist' epistemology, the following contextual information seeks to outline the historical, cultural and social background to the current research, its subject matter and its participants.

Although prevalent in clinical settings with adult populations, there has been limited application of mindfulness interventions with children and adolescents and even less so within school settings in the UK (Huppert & Johnson, 2010).

In addition, a recent review of the child based literature by Burke (2010) identified that child based interventions vary greatly and proposed the need for "collaboration and consensus" on standardised formats of intervention to allow for the replication and generalizability of findings. To date, the only mindfulness-based intervention to receive empirical investigation in the UK is reported by Huppert and Johnson (2010).

The curriculum described in this study was designed and created by three British educators, each with longstanding personal mindfulness practices (Burnett, Cullen & O'Neill, 2011). The subsequent teaching of the curriculum was established within two independent schools in the South East of England. The format of the intervention was a four-week psycho-educational curriculum delivered to pupils aged 14 and 15 as 40 minutes sessions once a week as part of their religious education curriculum.

In addition, pupils received a home practice CD containing audio recordings of 8 x 3 minute guided meditation exercises for use outside the classroom. The audio clips used were recorded by a well-known and well-regarded teacher of mindfulness meditation who has experience of teaching mindfulness in a range of settings. Senior pupils also assessed the content of the tapes in order to assess their applicability to young people.

Evaluation of the curriculum indicated that it was both feasible and generally well received by pupils. However, the findings reported limited impact of the intervention on a range of outcome measures. The authors therefore made a number of recommendations for the future modification of the curriculum to encourage greater benefits to pupils.

Firstly, due to the limited effect sizes reported, it was suggested that the curriculum be extended in length to allow pupils more exposure to meditative techniques. In addition, due to the homogenous sample (single sex, fee paying independent school) used in the study, it was suggested that future delivery of the curriculum be extended and researched within a wider and more representative pupil population.

3.4. The Current ‘. b’ Mindfulness Intervention

In order to carry out the proposed modifications to the curriculum, the programme team engaged in a collaborative project with Professor Felicity Huppert from the wellbeing-institute at Cambridge University and also researchers from the Oxford mindfulness Centre.

The revised programme was named the ‘. b’ curriculum referring to a central component of the course which requires pupils to stop and breathe at various times in their day.

Following its modification the curriculum is an 8-week psycho-educational programme, taught once a week for 40 minutes. Although extended in length, the content retains much of its initial content and remains closely based on the well-established, Mindfulness Based Stress Reduction course (MBSR: Kabat Zinn, 1982).

A brief description of the content and practices involved in each session is shown in the table below (Table 1). All pupils receive personal booklets at the beginning of the course in order to record the outcomes of their homework practice.

Table 1. *An outline of the content and key practices taught within each lesson of the ‘. b’ mindfulness curriculum.*

Pre course introductory lesson
<u>Key learning points</u>
<ul style="list-style-type: none"> • <i>Brief theoretical background to mindfulness and its potential applications.</i> • <i>Brief outline of the lesson contents.</i>
Lesson One – Puppy training
<u>Key learning points</u>
<ul style="list-style-type: none"> • <i>Directing attention (metaphor of spotlight is used).</i> • <i>Exploring and investigating bodily sensations and the breath.</i> • <i>Aiming and sustaining attention through firm, patient kind repetition.</i>
<u>Key Practices</u>
<ul style="list-style-type: none"> • <u>1. Simple directing of attention</u> <i>(this exercise requires pupils to pay attention to discrete parts of the body and to explore the sensations they may experience).</i> • <u>2. Aiming and sustaining attention for 2 minutes</u> <i>(This exercise requires pupils to direct their attention to a particular sensation (e.g. breath) and subsequently to redirect it when attention wanders).</i> • <u>3. Counting breathes in one minute</u> <i>(This exercise requires pupils to count the number of breaths they take in one minute).</i>
<p>NB: Pupils are also encouraged to practice excises 1 and 2 for homework.</p>

Lesson Two – Turning towards calm

Key learning points

- *Calming the mind and noticing how uncontrollable it can be.*
- *Developing acceptance of mental states through kindness, patience and curiosity.*
- *Anchoring in the body (focusing attention on current sensations in particular parts of the body).*

Key Practices

- 1. FOFBOC (Feet on floor; bum on chair) *(In this exercise, pupils are guided to pay initial attention to their feet and lower limbs. They then gradually expand their awareness to other sensations in distinct parts of their body).*

NB: For homework, pupils receive an 8-minute sound file to download to their mp3 player, which guides them through a FOFBOC.

Lesson Three – Recognising worry

Key learning points

- *Recognising the impact of cognitive distortions (e.g. interpreting and story telling, rumination and catastrophizing).*

Key Practices

- 1. 7-11- *(This exercise requires pupils to pay attention to their breath whilst they inhale for 7 seconds and exhale for 11).*
- 2. Lying down body scan (Beditation) – *(In this exercise pupils are lie on their backs with their arms by their sides. They are then guided through a meditative exercise, paying attention to various bodily sensations and to observe their mental reactions).*

NB: For homework, pupils receive an sound file to download to their mp3 player, which guides them through a Beditation exercise. They are encouraged to practice daily.

Lesson Four- Being here and now

Key learning points

- *Understanding the impact of habitual and automatic modes of functioning (metaphor of autopilot is used).*
- *Developing appreciation of present moment experiences (savouring).*

Key Practices

- 1. Mindful Mouthful- *During this exercise, pupils are required to taste different items of food (firstly a Malteser, secondly a piece of chilli or onion and lastly a raisin). Pupils are encouraged and guided to explore, in as much detail, their physical and mental experience, both in anticipation to tasting and whilst eating.*
- 2. '.b' exercise - *This exercise requires pupils to walk around, pretending they are stressed and busy. When the teacher blows a whistle they are to stop, pay attention to their feet on the ground, feel the sensations of their breathing and pay attention to how they are presently feeling).*

NB: For homework pupils are encouraged to practice the 'mindful mouthful' exercise at three points in each day. They are also encouraged to arrange to text each other at different points in the day to carry out a '.b' exercise.

Lesson Five – Mindful moving

Key learning points

- *Exploring the application of mindfulness to daily activities*
- *Investigating the effects of slowing down and paying conscious awareness to our actions*

Key Practices

- 1. Samurai walking - (This exercise requires pupils to walk 10 -20 meters focusing on the physical sensations in their legs and feet).
- 2. Routine revisited – (As a purely home based task, pupils are requested to choose one activity they do regularly and to purposely do it more slowly, paying attention to their sensations and reactions).

NB: These two activities are set for homework.

Lesson Six - Stepping back

Key learning points

- *Recognising our stream of consciousness and re-perceiving the nature of our thoughts*
- *Recognising habitual thought processes*
- *Depersonalising thought / stepping back*

Key Practices

- 1. Listening to thoughts as sounds – *Pupils are encouraged to observe their stream of consciousness and attempt to perceive thoughts as impersonal sound.*
- 2. Top ten tunes – *Pupils are encouraged to notice reoccurring thoughts and list the 10 most prevalent.*
- 3. Seeing thoughts as clouds – *Pupils are encouraged to depersonalise thoughts and see them as passing clouds, letting them come and go freely without reacting to them.*

NB: These activities are set for homework.

Lesson Seven – Befriending the difficult

Key learning points

- Understanding stress and how it impacts an individual.
- Learning to accept and “be with” difficult emotions
- Responding rather than reacting to emotions

Key Practices

- Identifying stress signature – *Pupils are directed to imagine an imminent stressful experience and asked to notice and record how stress manifested in their bodily sensations and their breath.*

Lesson Eight – Pulling it all together

Key learning points

- *Pupils are encouraged to consider the potential applicability and the skills and techniques they have learnt.*
- *Pupils are encouraged to give their reflections on the course.*

Key Practices

No additional practices are taught in this session

3.5. The Mindfulness in Schools Project

In addition to the creation of the ‘. b’ curriculum, the programme team also established an organisation named The “Mindfulness in Schools Project” (MiSP). The MiSP promotes itself as “a non-profit organisation whose aim is to encourage support and research the teaching of secular mindfulness in schools” (www.mindfulnessinschool.org). The organisation offers training to teachers in other schools who are interested in running the curriculum. The only requirement for those teaching the curriculum is that they have a personal mindfulness practice and have completed at least one MBCT or MBSR programme.

3.6. The Settings for the Present Research

Following initial navigation of the MiSP website (www.mindfulnessinschools.org) the present author contacted one of the founder members of the programme team to discuss potential avenues of research and to identify possible school settings to carry out the research.

Following a number of initial enquiries, two schools were identified as potential settings for an investigation. These were settings that would be delivering the 8-week ‘. b’ course at an appropriate time and who would be willing and available for the researcher to collect data from pupils in an agreed timeframe (June 2011 – July 2011). Gatekeeper consent was sought from both school prior to commencing with the study (see appendix A).

Of the two schools identified, school A is a fee paying, single sex school for boys aged 11-18. It is one of the two schools in which the curriculum was established and is the workplace of one of the founder members of the MiSP programme team. As such, the curriculum is embedded within the school and is taught by one of the creators of the programme. The programme is provided to year 9 pupils as part of their school curriculum. The school had also taken part in previous research carried out by the Well Being Institute at Cambridge University (Huppert & Johnson, 2010) and had conducted internal research of its own.

In contrast, School B is a mixed sex, state comprehensive school. Although it is situated within the same local educational authority as school A, its pupils come from a much more diverse and relatively poorer socio-economic population. The cohort from which the research participants came, were the first to be taught the 'b' curriculum in the school. They were also the first class to which the teacher had delivered the curriculum.

The teacher of the curriculum in school B was the deputy head teacher at the time of the research. He had a longstanding personal mindfulness practice and delivered the curriculum as part of an overarching 16 week 'Opening Minds' curriculum taught to year 7 pupils. The aims of 'Opening Minds' classes are to support pupils' learning in the areas of, citizenship, relating to people, managing situations and managing information.

The historical, social and environmental differences between the two schools described here are considered to provide valuable diversity to the data collected, providing richness and contrast to the investigation. In particular, the distinction between a state and an independent school may provide interesting comparison considering the influence of socio economic factors on pupils' mental health and wellbeing.

3.7. Research Questions

Having outlined the epistemological framework of the current research and the context in which it is set, the following section addresses the research questions guiding the current investigation.

Although each question identifies a distinctive research element under investigation, all questions seek to explore the creation of meaning through the perspectives of pupils.

By allocating primacy to the pupils' perspectives, the researcher considers them to be the experts in their world. As such, their personal experiences, feelings and opinions are the preferred lens through which to explore the questions outlined.

The two research questions guiding the investigation are set out below:

1. What are the self-perceived impacts for pupils of learning mindfulness in school?
 - Do boys and girls perceive impacts differently?
 - Do pupils perceive impacts differently in state and independent schools?
 - Does the amount of time since completing the MiSP course influence pupils' perceptions of its impact?

2. What do pupils perceive to be the barriers to practicing mindfulness?

3.8. Methodological Design of the Current Research

In consideration of an appropriate research design, Willig (2001) argues for consistency in research between the researcher's epistemological stance and the methods they apply.

However, it has also been argued that epistemological beliefs should not limit the research methods used in studies and there is a longstanding debate as to whether such distinctions are clear and to what extent the matching of epistemology to method is in fact possible (Bryman, 1984). Howe and Eisenhart (1990) argue that it is a predominant misconception among many researchers that epistemology, design and method should be regarded as being synonymous.

Traditionally, Social Constructionist research has demonstrated a preference towards qualitative research methods, seeking to gather rich exploratory accounts that do not decontextualize data. Heavily critical of Positivist – Empiricist perspectives, Constructionist's have generally been critical of the use of quantitative methods of data collection, suggesting that to do so is to be in opposition to the constructionist view (Burr, 2003).

However, it has been suggested that in actuality it is not the methods applied in Constructionist research that define it, but rather the researcher's interpretations of findings that are of importance (Gergen, 1997). As such, Burr (2003) suggests that Constructionist researchers may validly use both qualitative and quantitative methods.

In support of this view, Johnson and Onwuegbuzie (2004) suggest that instead of selecting methods based upon epistemological underpinnings, it is more important that researchers consider which methods will most effectively answer their research questions.

In addition, Creswell (2003) suggests that when deciding on appropriate methods, consideration should also be given to the setting in which research is based and the audience for whom the research is written.

3.9. The Strengths and Weaknesses of Qualitative and Quantitative Designs in Educational Research.

The following section will consider the most appropriate methodological approach for the current study given its context and the research questions being posed.

The relative strengths and weaknesses of both qualitative and quantitative research designs will be discussed with reference to the real-world context of educational research.

3.10. Quantitative Research Designs

It has been argued that real-world settings such as schools do not lend themselves to the use of traditional empirical paradigms (Condelli & Wrigley, 2004). The main source of this argument is drawn from claims that it is very difficult to control for extraneous variables in such environments (Robson, 2002). Hence, it is difficult for real-world research to match the proposed scientific rigor of laboratory based experimental methods.

Criticism of quantitative based research into the effectiveness or impact of school based interventions often highlights the need for randomised controlled designs and active control groups, without which it not possible to establish comparative effects and make claims of directionality and causality. It is also suggested that the reduction of such experiences to numerical expression and probability tests does not provide sufficiently meaningful information about how the observed effects came about.

However, proponents of quantitative methodology in educational research argue that only quantifiable, statistical evidence can be considered useful when considering the potential use of a given intervention or approach in schools. This standpoint reflects the fact that often the audience for educational research comprises of policy makers and curriculum developers who need evidence from which to endorse a certain approach.

In its favour, quantitative research has the ability to utilise large sample sizes to generate expansive datasets. Data can then be reduced into numerical form and analysed statistically in order to make claims regarding the validity, reliability and generalizability of an effect size. In addition, its standardised methods allow researchers the ability to replicate the studies over time with varying populations to gain comparative data.

3.11. Qualitative Research Designs

In contrast to quantitative designs, qualitative research is able to generate subjective, meaningful data that is rich in explanatory power (Denzin & Lincoln, 2000). In comparison to quantitative methods that seek to decontextualize effects, qualitative research takes a more holistic approach to investigation, paying attention to both the social and interactive factors influencing both the collection and analysis of data.

In addition, qualitative methods are considered to offer researchers flexibility in their use of techniques in order to respond to unexpected scenarios associated with real-world research. Such flexibility allows for methodological refinement throughout the process.

However, critics of the use of qualitative methods in educational research argue that the level of inherent subjectivity weakens any findings (Condelli & Wrigley, 2004). It is also suggested that the small sample sizes used in qualitative research mean that knowledge obtained therefrom cannot be usefully extrapolated to the wider population and means that claims of cause and effect are not possible (Cresswell, 2003).

Qualitative methods are also criticised on the premise that the analysis of data is an interpretive process, and as such, findings are inherently biased and lack objectivity. In addition, researchers may also reject the possibility of qualitative methods due to their time consuming nature. Pressured, as many academics are, to provide publications, often the laborious task of data collection, verbatim transcription and line-by-line analysis are not considered efficient ways of carrying out research.

3.12. The Compatibility of Qualitative and Quantitative Designs

Arising as they do from distinct epistemological paradigms, there has been longstanding division between the proponents of qualitative and quantitative research. Purists from both camps argue that the two methods are polar opposites and therefore claim an absolute incompatibility of the two methods under any circumstances (Howe, 1988).

The conventional approach to selecting an appropriate research design has been to assess the differences between the two methods and to highlight the weaknesses of one or other to protect one's methodological stance (Johnson & Onwuegbuzie, 2004). However, Onwuegbuzie and Leech (2005) suggest that such purists fail to acknowledge the apparent inconsistencies in their standpoints. Where Positivist purists present methodological 'objectivity' as the cornerstone of the quantitative method, they simultaneously fail to acknowledge the numerous subjective decisions that are made throughout the research process.

Onwuegbuzie and Leech (2005) contend that even the process of deciding what to study and what instruments to use follow subjective decisions made by the researcher. Similarly, the selection of measurement items, statistical analysis and alpha levels are influenced by subjective opinions and beliefs about what is the 'best' course of action.

So the claims of qualitative purists are not impervious to criticism. Although, proponents acknowledge the inherent subjectivity in their methods, they often fail to provide sufficient justification for methodological decisions and the interpretation of their data. By doing so, it is argued that they do not allow for the quality of the research to be adequately judged (Onwuegbuzie & Leech, 2005).

3.13. Introduction to Mixed Methods Designs

In light of the apparent discrepancies inherent in the arguments of both the qualitative and the quantitative camps, many contemporary researchers have advocated combining qualitative and quantitative design in order to complement one method with another. This approach creates a mixed method design. Although mixed methods research is still a relatively new phenomena, it is a rapidly expanding research design paradigm, which is growing in popularity in the increasingly complex and dynamic world of research (Cresswell, 2003).

Its aims are to draw strengths from both qualitative and quantitative methods and to combine them in order to offset the weaknesses inherent in each (Johnson & Onwuegbuzie, 2004). Creswell (2007) argues that such an approach is particularly useful for conducting 'real world' educational research in which researchers aim to provide meaningful and rigorous data from a complex and unpredictable environment. Its growing support in such fields has led to the approach being branded the "third research paradigm".

Mixed methods research is argued as a pragmatic approach to investigation. It is argued that if findings are substantiated across different approaches, then confidence in research conclusions shall be increased. Similarly, if findings conflict, a researcher can utilise this knowledge to develop their interpretations and assumptions.

Greene, Caracelli and Graham (1989) suggest five main reasons why a researcher may wish to engage in mixed methods research; Triangulation (to test for consistency), Complementarity (to clarify results), Initiation (to uncover conflicting evidence), Development (to build upon previous findings) and Expansion (to increase the depth and breadth of findings).

In addition, Creswell (2007) notes that quantitative and qualitative datasets can be combined in three distinct ways. Firstly, by assimilating the two together to provide a richer exploration of a particular question. Secondly, by connecting one with another to develop or enhance one's findings, and, finally, by 'embedding' data from one source within another to provide support for one's findings.

Johnson and Onwuegbuzie (2004) suggest that there is almost "unlimited expression" to mixed methods designs and that the combining of methodology can occur both within and across all stages of research.

3.14. Rational for the Choice of a Mixed Methods Approach

In light of the “real world” context of the present study, it was considered that the combination of both quantitative and qualitative data would provide a rich exploration of the research questions.

By combining both methodologies, the investigation aims to expand the breadth and depth of subsequent findings, offering some level of generalisability and replicability to the findings, whilst retaining the explanatory nature and meaning of the data (Greene et al., 1989).

By combining multiple types of data, it is also hoped to provide information that is of relevance to a wide audience, including researchers, policy makers and practitioners. However, it is noted that the current research does not seek to identify a “universal truth” or “reality” about the nature or impact of ‘. b’ curriculum.

Instead it aims to explore the subjective perspective of both individuals and groups of pupils in an attempt to enrich our understanding of their experience of learning mindfulness in schools. Rather than confirming findings as “truth”, the incorporation of quantitative data seeks to develop an understanding of the prevalence of certain views within a larger population.

3.15. Research Procedure

The following section outlines the rationale for and implementation of the individual methods chosen for the current investigation. It then offers a full description of the analytical methods used to interpret and describe the data collected. The study described here utilised three discrete methodological techniques, each of which reflects a distinctive perspective from which to investigate the key research questions.

3.16. Overview of an Online Questionnaire Method

Denscombe (1998) identifies three key characteristics of a research questionnaire. Firstly, it collects data that can be later used for analysis. Secondly, it consists of written questions that are the same for each respondent and thirdly, it focuses on collecting pertinent information directly from the respondent.

Questionnaires are considered an appropriate method of gaining information regarding people's opinions, attitudes and beliefs (Denscombe, 1998). In addition, they are a well-utilised method of data collection in educational research (Borg and Gall, 1989).

3.17. Strengths and Weaknesses of Questionnaires

One of the main advantages of using a questionnaire method in psychological research is that it allows data to be collected from a large sample population and to be simultaneously obtained from various sources. Questionnaires also allow for data to be simplified and expressed numerically in order to draw comparisons and to determine significant change within a given measure (Denscombe, 1998). However, critics of the method point out that data obtained via questionnaires often lacks explanatory power and may therefore be inadequate in understanding complex phenomena such as emotions, attitudes and behaviours (Denscombe, 1998).

Advocates of the Social Constructionist approach also point to an inherent level of subjectivity in participants' interpretation of questions. Therefore the participants may not always be answering questions based on consistent understanding of what is asked (Burr, 2003). Similarly there is no way of knowing how truthful a respondent has been and to what extent they give meaningful consideration to a question (Denscombe, 1998).

However, Converse & Presser (1986) suggest that providing open-ended questions as follow-ups to closed questions can combat such criticism. The incorporation of open-ended questions allows participants the freedom to give full individual expression to their answers. As such, questionnaires can obtain contextual information, which may be beneficial in understanding complex multifaceted phenomenon such as emotions, attitudes and behaviours.

A further limitation in using a questionnaire is that of return rate. Jordan (1998) suggests that because postal questionnaires have approximately a 25% return rate, their results may be inherently biased. As data is gathered from only those people who take the time to return the form, it may only reflect the opinion of individuals who have a specific viewpoint and may not be a representative sample.

As such, Riva, Teruzzi and Anolli (2003) suggest that online questionnaires may be a useful alternative. They offer access to larger sample sizes and may be faster and more convenient for respondents to complete, therefore reducing response rate difficulties.

Other benefits of an online approach may be that it reduces postal costs to the researcher and allows for increased speed and volume of data collection (Wright, 2005). It is also noted that some online programmes offer the ability to transfer data immediately into spreadsheet format, thereby reducing the likelihood of human error in data handling.

3.18. Questionnaire Design

In light of the strengths and weaknesses of the questionnaire method, an online questionnaire was deemed both appropriate and useful for the current study. Following consideration of a number of online programmes, the author considered "Survey Monkey" (www.surveymonkey.com) the most user friendly and easily accessible programme to meet the requirements of the study.

Survey Monkey permits the use of a large range of questionnaire designs and allows for participant data to be stored confidentially and transferred into spreadsheet format for later analytic purposes. The programme allows respondents to access the questionnaire remotely from any computer connected to the Internet. Data can, therefore, be collected from a large pupil population and keeps response requirements of pupils to a minimum.

In order to explore the distinctive research questions of the study, capturing the subjective meaning of pupils' responses, the author devised a fit-for-purpose questionnaire (see appendix F). Following the guidelines set out by Denscombe (1998), particular consideration was given to the clarity and succinctness of the questions presented and also the use of language appropriate for use with the target age group (secondary aged pupils).

Initial questions related to the personal details of respondents were considered necessary in order that pupil responses could be compared and contrasted based on a range of independent variables (gender, school and date of course completion). However, particular care was taken not to obtain any information that could lead to the identification of individual respondents. Pupils' email addresses were not collected and their log in details were not traceable to them individually.

In light of the previously identified impact of personal mindfulness practice to outcome variables (Huppert & Johnson, 2010), initial closed questions focused on identifying the frequency of pupils' use of mindfulness and identified their preferred technique. This information was considered useful in contextualising and providing meaning to the data. Pupils' choice of preferred mindfulness technique was based on the 7 core practices taught within the curriculum (7-11, Mindful breathing, Noticing your stress signature, FOFBOC, Mindful eating, Counting breaths and Seeing thoughts as clouds).

In order to investigate pupils' perceptions regarding the impact of learning mindfulness in schools, pupils were required to respond on a 5-point Likert scale relating to the perceived helpfulness of mindfulness in relation to a range of psychological variables. These were previously identified in the theoretical literature related to mindfulness (*attention, stress and worry, emotion regulation and self perception*) and functional variables emerging from theoretical and empirical literature (*relaxation, interpersonal relationships, schoolwork, extra curricula activities*). The word "helpfulness" used in question formatting was chosen in order to capture both the extent and nature of perceived impact.

Due to the complexity and subjective nature of the phenomenon being investigated (e.g. attitudes), open-ended questions were presented following each closed question. This was done in order that pupils could clarify and expand on their answers and give meaning and contextual information to their responses.

Such questions allow for consideration to be given to pupils' individual interpretations of questions and to increase the explanatory power of the questionnaire, gaining further insight into pupils' experiences.

Similarly, open-ended questions were chosen to explore pupils' perceptions of the barriers to practicing mindfulness. The absence of closed questions was due to a lack of theoretical literature to guide relevant questions and in order to give the respondents complete freedom to explore any factors they considered important.

The combination of open and closed questions used in the questionnaire can be seen to utilise a "within stage", mixed model design (incorporating open ended question within a scaled questionnaire).

3.19. Pilot Questionnaire

Polit, Beck and Hungler (2001, p.467) refer to pilot studies as "*small scale versions, or trial runs, done in preparation for the major study*". Baker (1994) suggests that such studies can be beneficial in pre-testing a given research instrument, such as a questionnaire, to decipher whether they are fit-for-purpose.

As such, prior to sending out the questionnaire, a pilot study was carried out in order to pre-empt and plan for any potential difficulties within the questionnaire design. This ensured that the questions presented were clear, concise and unambiguous to participants. Similarly, it sought to identify any potential difficulties with the online nature of the questionnaire and any technical components that may have caused difficulty to respondents.

The pilot questionnaire was sent to a group of 10 pupils from school A. These were pupils who had all completed the ' . b.' course previously and to whom the questions were deemed relevant. These pupils did not take part in the subsequent full-scale study.

During evaluation of the study, certain changes were made in order to respond to the perceived problems. Firstly, the instructions given to navigate the online programme were not deemed explicit enough and a few participants were not able to complete the questionnaire. In response, instructions were made clearer and the programme navigation made more efficient.

In addition, the study also demonstrated the need to revise the wording of the open-ended questions in order that pupils gave full expression to their answers. The wording was therefore reconsidered and simplified to ensure its appropriateness with a school-based sample.

3.20. Questionnaire Procedure

A link to the online questionnaire was sent by email to the relevant teacher in both schools. This link was subsequently sent out to pupils in order for them to complete the questionnaire either from school or home computers. For participants in school B the researcher was present in the class whilst pupils were provided with the link to the questionnaire.

A total of 107 pupils were considered eligible to complete the questionnaire. These were pupils who had completed the .b curriculum in school either in the spring Term of 2011 or the summer term of 2011. From this sample a total of 46 pupils completed the online questionnaire. Of those not completing the questionnaire, 5 withdrew themselves from the study. A further 2 pupils were also withdrawn by their parents. For the remaining 54 students not completing the questionnaire, no reason was reported. However, it should be noted that in school A, the questionnaire was sent out prior to an internal examination period after which pupils were no longer required to attend school. This factor may have been influential in the low completion rate.

Of the participants completing the questionnaire, 37 were male and 9 were female. Pupils were all aged between 11-15. Participants from School A (n=27) were year 9 pupils who had completed the ' . b' course in either the Spring or Summer term of 2011. Participants from school B (n = 19) were from a year 7 class who completed the ' . b' course in the Spring term 2011. Table 2 summarizes the characteristics of the questionnaire sample by school.

Table 2. Distribution of Questionnaire Participant Characteristics by School.

	School A (Independent)	School B (State)
Participants (n)	27	19
Age		
Mean	15	11.9
Range	14-16	11-12
Gender		
Male	27	10
Female	0	9
Cohort		
Spring Term	5	19
Summer Term	22	0

3.21. Data Quality

To ensure the quality of the data collected via the online questionnaire, a number of steps were taken in order to demonstrate the validity and reliability of the measure. Firstly, during the pilot phase of the design, feedback was gained from current students as to the readability and clarity of the questions presented. The participants reported the questions to be easy to understand and applicable to their experience of learning mindfulness.

In addition, the use of open-ended questions allowed the researcher to check whether pupil understanding of the questions corresponded to that of the researcher, hence supporting its validity in measuring what it intended to.

Prior to data analysis, the reliability of the data was investigated. However, as the questionnaire items were independent of one another and the presence of an underlying unitary construct was not assumed, the inter-item correlation (Cronbach's Alpha) was not calculated.

In addition, Kendall's coefficient was calculated as a measure of inter-rater reliability. This test determines the strength of the relationship between pupils' responses on each question. The results revealed a concordance of 0.199, which indicates a fairly high degree of variability between pupils' responses on each of the 7 questions.

3.22. Overview of Focus Group Method

Litoselletti (2003, p. 1) describes focus groups as “*small structured groups with selected participants, normally led by a moderator. They are set up in order to explore specific topics, and individual’s views and experiences, through group interaction*”.

Focus groups are more than an efficient way of merely collecting multiple viewpoints concurrently. Participants in focus groups are encouraged to discuss and explore relevant issues collaboratively, with data being drawn from the dynamics of interaction between participants. By emphasising interactive processes such as agreement, disagreement and group consensus, focus groups empower participants to become active agents in the analytic process (Kitzinger, 1995).

3.23. Strengths and Weaknesses of Focus Groups

A suggested benefit of using focus groups in social research is that they are arguably more realistic than other methods of enquiry. As in real life, the decision-making of respondent is both influenced by and influences others.

In addition, the presence of the researcher in the discussion allows for the incorporation of more sensitive information, such as body language, and also allows the researcher to probe respondents to provide breadth and depth to their responses.

Although a relatively underused method in the social sciences (Barbour and Kitzinger, 1999), it has been suggested that focus groups may be a useful tool as part of mixed methods research to provide either primary or secondary data (Morgan, 1997).

Many of the limitations of focus groups centre on the fact that they are difficult and time consuming both to conduct and analyse. As a central figure in the discussion, the skill of the facilitator is crucial to the success of the focus group. The facilitator must be vigilant in their level of involvement and their use of leading questions in order to prevent influencing the responses or focus of the group discussion.

Similarly, the facilitator must also be wary not to over endorse the views of particular individuals who may seek to dominate the conversation. They must exercise the ability to discern between individual and group viewpoints.

3.24. Focus Group Design

Following consideration of the strengths and weaknesses of focus group methodology, it was considered applicable, within the current research. The use of focus groups sought to investigate how social processes, in particular pupil interaction, influences the creation of meaning and group consensus regarding the perceived impacts of learning mindfulness in school and the barriers preventing its use.

As suggested by Litoselletti (2003), in preparation for the focus groups the researcher first developed a 'Questioning Route' (see appendix I), which identified the pertinent questions and related to the key issues to be explored in the sessions. It also provided the researcher with prompts and phrases to help facilitate discussion.

Litoselletti (2003) notes that careful consideration should be given to the questions used when carrying out focus groups. In particular, care should be taken to ensure that questions are sufficiently "open" to encourage participants to fully express their opinions (Stewart & Shamdasani, 1992). Efforts should also be made to avoid the use of value judgements that may introduce bias into participant's responses (Litoselletti, 2003).

The questions used in the current research were therefore reflected on with reference to their clarity, neutrality and focus in order to generate a schedule which focused on gaining in-depth and focused responses, but which also allowed the researcher a level of flexibility in which to explore the interests and focus of the group.

3.25. Pilot Focus Group

Litoselletti (2003) suggests that many of the limitations of the focus group approach can be reduced by careful planning and skilful moderating. However, prior to conducting the current research, the researcher had no previous experience in either preparing or facilitating focus groups. In light of this fact, a pilot study was conducted in order that the researcher could assess the appropriateness of the questioning route, his skill in facilitating discussion and the potential pitfalls and difficulties associated with the approach.

The pilot study was conducted with 8 pupils from school A, each of whom had previously completed the MiSP curriculum. The focus group was held over the school lunch period in a quiet room removed from the remainder of the school. The group was recorded via a digital recording device and data were transferred to computer for subsequent analysis. Pupils within this group were not eligible to complete the full-scale study.

Following personal reflection on the effectiveness and perceived success of the group processes, the author deemed the pilot to be generally successful. However, the process did highlight the difficulty and importance of developing skills in facilitation to ensure the smooth progress of the discussion.

In particular, the researcher found it difficult to encourage the whole group to participate and noticed a tendency of one or two pupils to dominate the discussion. As such, the process demonstrated the importance of making all participants feel comfortable to express their views and the researcher retaining an element of control to ensure the discussion incorporates all pupils.

The study also highlighted the importance of the environment in which the discussion takes place on the quality of audio recording. Due to the acoustics of the room used, pupils with quieter voices became difficult to pick up once the recording was transferred to a computer. These factors were given consideration and modifications were made to the preparation and facilitation of the focus groups carried out in the full-scale study.

3.26. Focus Group Procedure

Three separate focus groups were carried out as part of the full-scale research. Due to time constraints placed on pupils, two were completed in school A whereas only one was carried out in school B. All focus group participants in both schools were chosen at random from the register of pupils who had completed the course.

In school A, the two focus groups contained 6 pupils in each. The groups were created based on the date that pupils had completed the course (Spring or Summer term). This was done to ensure that all members of the group were reporting on a shared experience. The sessions were conducted during lesson time in a separate large, quiet room within the school. Pupils sat around a large, round table and had access to water and refreshments throughout the discussion.

In school B, the final sample consisted of 6 pupils, consisting of one male and five female participants. The group took place within a small computer room in the school. Pupils sat around a small, rectangular table and had access to refreshments (sweets) but no water.

The group sessions lasted between 30 - 45 minutes in length and effort was made to ensure all participants were given an equal opportunity to share their opinions. A digital recording device recorded all discussions and the data collected were transferred to a computer for subsequent transcription. Information relating to pupils' body language or group dynamics was noted on paper by the researcher and referred to in later analysis. Following data collection, the recorded discussions were subsequently transcribed verbatim and prepared for qualitative analysis (for example, see appendix J). Table 3 summarizes the characteristics of the questionnaire sample by school.

Table 3. Distribution of Focus Group Participant Characteristics by School.

	School A (Independent)	School B (State)
Participants (n)	12	6
Gender		
Male	12	1
Female	0	5
Cohort		
Spring Term	6	6
Summer Term	6	0

3.27. Overview of Semi Structured Interviews

The semi-structured or ‘qualitative’ interview has been described as “*a conversation with a purpose*” (Smith, Flowers and Larkin, 2009, p.57). The aim of such a conversation is to gain insight into the experience, feelings, values or opinions of a participant (Esterberg, 2002).

Interview methods can differ significantly in their style and structure. Methods vary in the extent to which respondents are directed to discuss given topics and to which they are given freedom to express and explore their replies (Coolican, 2004).

The most commonly used approach within qualitative research is the semi-structured interview. This method outlines the key topics to be covered and information required, but does not stipulate a rigid format or process to be followed. The approach allows participants to give full expression to their responses and allows for flexibility in question delivery to explore unpredictable or spontaneous discussion points (Coolican, 2004).

Although interviews may take place over the telephone or online, most in-depth interviews for research purposes are carried out face-to-face. This format is chosen as it allows interviewers to develop rapport with the participant and to consider important non-verbal information that is lost when remotely conducted procedures are used. In-depth interviews are a well-established qualitative method within social science research and, although often used as stand alone methods, they are also considered to be an effective compliment to additional methods.

3.28. Strengths and Weaknesses of Semi Structured Interviews

The use of in-depth interviews in scientific research is considered by some to be an especially useful approach to explore complex topics where detailed information is needed regarding individuals' experiences (Paton, 1990). Longfield (2004) notes that interviews are also valuable to evaluate and improve the implementation of projects / initiatives.

In particular, the flexibility allowed within the interview process arguably allows for the emergence of unexpected ideas and for comprehensive exploration of issues unhindered by predefined format (Boyce & Neale, 2006). However, critics have argued that, unless well managed, such flexibility may also lead to inconsistencies within the data collected (Paton, 1990).

Reviewing the use of in-depth interviews in scientific research, Taylor and Bogdan (1984) note the central importance of the interviewer. They suggest that positive rapport and cooperation is crucial to the success of a discussion as participants may have difficulty in sharing their personal feelings and experiences with a stranger. Hence, it is suggested that interviews are highly susceptible to response bias based on what participants believe the interviewer wants to hear.

In contrast, it is also noted that a positive rapport and relationship between interviewer and interviewee can be a particularly beneficial aspect of the interview process. It is suggested that such rapport can lead the interviewee to reveal more personal and meaningful information that may not be accessible without the formation of such a relationship. The success of this aspect of the process is arguably determined by the skill and sensitivity of the individual interviewer. As such it is noted that interviewees should be suitably trained in interviewing techniques (Boyce and Neale, 2006)

Further criticism of interview methodology is that the data collected offer little to no generalizability across a population (Wimmer & Dominick, 1997). Additionally, interviewing can be particularly time consuming to complete, transcribe and analyse.

3.29. Semi Structured Interview Design

Following consideration of the strengths and weakness of in-depth interviews, the author considered them a useful method of data collection for the current study. Their incorporation allows for the in-depth exploration of pupils' perceptions, thereby capturing the contextual and personal experience and opinions of pupils. Although data are not generalizable, they do have explanatory power.

As suggested by Boyce and Neale (2006), prior to the creation of an interview schedule, initial consideration was given to the type of information to be obtained, the characteristics of the participants and any pertinent ethical issues. Deliberation on these points by the researcher guided the subsequent development of an interview schedule (see appendix O). The researcher compiled a list of pertinent questions to direct the interviewers' questioning and provide some structure to the discussions. A number of prompts were also noted to further guide the questioning.

Particular consideration was also given to ensuring that all interviewees were able to provide informed consent to their participation and that they were aware of how their data would be handled and analysed. All participants were informed that they could withdraw their data at any time prior to transcription following which data would no longer be traceable to individual interviewees.

3.30. Pilot Interviews

Boyle and Neale (2006) suggest that, in order to ensure the effectiveness of an interview methodology, trained facilitators should be used who are practiced in using a particular interview instrument.

However, prior to conducting the current study, the researcher had only limited experience of carrying out in-depth interviews. In light of this, a pilot study was conducted to allow the researcher to gain practice in facilitating the interview schedule and to review its applicability and effectiveness within the given context.

The pilot study was conducted with 3 pupils from school A, each of whom had previously completed the MISp curriculum. The interviews were held in the dining hall within a residential block. No other pupils were present at the time. Interviews were recorded via a digital recording device and data were transferred to computer for subsequent analysis.

Following personal reflection on the effectiveness and perceived success of the interview schedule, the author deemed it to be appropriate for use in the full-scale study. All pupils interviewed responded positively to the questions and shared their opinions freely with the interviewer.

The pilot process did highlight an issue to be addressed in the full-scale research. The recording equipment used (Dictaphone) was not of good quality and it was hard to hear the respondents clearly during subsequent analysis.

3.31. Interview Procedure

A total of 8 interviews were carried out as part of the full-scale research. Due to time constraints placed on the pupils, only two were completed in school B and the remaining 6 were carried out with pupils from school A.

In school A, 3 of the interviewees had completed the MiSP curriculum in the preceding Spring term and 3 in the Summer term. Both pupils from school B had completed the course in the Spring term.

In school A, the interviews were carried out in two different locations. The initial 3 interviews were conducted in a small office within a residential block after school hours. The remaining 3 were carried out in a large, quiet room within the school building during lesson time. Pupils interviewed in both locations had access to water and refreshments throughout the interview process.

In school B, both interviewees were female. The interviews were conducted in a small computer room in the main school building. Interviewees had access to refreshments but no water during the interview. Table 4 summarizes the characteristics of the questionnaire sample by school.

Table 4. Distribution of Interviewee Characteristics by School.

	School A (Independent)	School B (State)
Participants (n)	6	2
Gender		
Male	6	0
Female	0	2
Cohort		
Spring Term	3	2
Summer Term	3	0

The interviews lasted approximately between 8 – 31 minutes with an average length of 18 minutes. A digital recording device was used to record all discussions and the data collected were transferred to a computer for subsequent transcription. All recorded data were transcribed verbatim and prepared for qualitative analysis (for example, see appendix P).

3.32. Critique of Method

The current research employed three different methods (Online questionnaire, Focus groups and In-depth interviews) to explore the research questions. This approach enabled a variety of rich and meaningful data to be collected. However, each of the chosen methods had certain limitations.

Firstly, the response rate for the online questionnaire was low (43%). This in part reflected the complications, which occurred within the online software used. A number of participants (n=21) provided incomplete data, exiting the survey before its completion. Due to an imposed restriction within the software, only data from completed surveys could be included in the final dataset.

In addition, pupils in school A received the link to the online questionnaire close to their internal exam period. This may have been an influential factor in the low response rate due to competing priorities of revision and exam preparation.

In critique of the focus group methodology used, limitations primarily occurred in relation to the skills of the researcher in facilitating discussion. Although a pilot study was conducted in school A, it was notably more difficult to encourage pupils in school B to openly discuss their perspectives. Such difficulty may in part have been due to the researcher's inexperience of conducting discussion with pupils from a lower age group (aged 11-12).

Due to time constraints, only one discussion was conducted in school B, compared to 2 in school A. Similarly, only 2 in depth interviews were conducted in school B compared to 6 pupils in school A. This disproportionality in data collection meant that the qualitative dataset was heavily weighted towards the response of pupils in school A.

3.33. Quantitative Data Analysis

Questionnaire data were collected between 28.06.11 and 17.07.11. It was then automatically transferred into Excel spreadsheet format (see disc attached in appendices). The data were then inserted manually into an SPSS spreadsheet in order to carry out relevant statistical analyses. Initial descriptive analyses were carried out on pupils' responses to closed questions.

In consideration of the appropriate statistical analysis to use in the study, deliberation was given to whether the Likert scale data should be treated as ordinal (values can be ranked in order) or interval (an equidistant scale with arbitrary zero point) data. Geoff (2010) suggests that in order to compute more powerful parametric analysis on Likert scale data, one must be able to infer both symmetry and equidistance between each point of the scale. This was not the case in the Likert scale used in the current research, as the distinction between the points of the scale (Not at all, Slightly, Moderately, Very, Extremely) was not always the same. As such, it was deemed most appropriate to carry out non-parametric analysis of the data, as the assumption of a normal distribution curve would not be met.

A Friedmans test (non parametric version of Repeated Measures ANOVA) was computed in order to test for any overall difference in pupil responses across the 9 questions relating to perceived impact of mindfulness training. This non-parametric analytic procedure tests for significant differences between the mean ranks of pupils' responses for each questionnaire item.

Wilcoxon Signed Ranks tests were then carried out to investigate where the significant differences between questions were. This is a non-parametric analytic procedure to test for significant differences between the mean ranks of each group against one another.

Finally, Mann Whitney U tests were conducted to determine if there were any differences between the groups (gender, school type and time since completion of the course) and if they had a significant impact on pupils' responses. The Mann Whitney U test evaluates whether the medians on a test variable differ between two groups.

3.34. Qualitative data Analysis

Thematic Analysis was used to analyse the qualitative data collected in the study. Thematic Analysis is a qualitative analytical technique that focuses on identifying and reporting patterns (themes) in a dataset (Braun & Clarke, 2006). This technique can arguably be seen as the basic analytical skill underpinning all qualitative methods (Holloway & Todres, 2003).

In contrast to other forms of qualitative analysis, Thematic Analysis is not restricted by epistemological assumptions. It therefore allows the researcher flexibility to interpret and expresses the data in ways compatible with both constructionist and positivist approaches (Braun & Clarke, 2006).

Critics of the approach have argued that such flexibility often leads to inconsistency within the analysis reducing its reliability (Ankati, Billig Edwards & Potter, 2002). In response, Braun and Clarke created a 6-phase guide to conducting Thematic Analysis to ensure that the process is guided by a more rigorous and structured procedure. To improve transparency, they also noted that it is important for researchers to be explicit regarding the theoretical positions and values underpinning their analysis, as these are influential in the interpretation of data. This guide was used to guide the analytic procedure of the current study.

Thematic Analysis was employed in the investigation of recorded dialogues from focus groups and individual interviews. The initial stage of the analytic process entailed the researcher familiarising himself with the data. All recorded data were listened to and initial notes were made regarding any pertinent issues. All recordings were then transcribed verbatim and checked against the original recording to ensure their accuracy.

Following transcription, the data were transformed into a table in Microsoft Word leaving a column along side the transcripts to systematically explore the data making notes of information considered relevant to the research questions (see appendices K, L, Q & R). Although time consuming, this process gave the researcher a good understanding of the data.

Following the initial familiarisation process, initial codes were subsequently developed. These referred to the basic semantic or latent features of the data expressed in simple grammatical form. Particular effort was taken to give each aspect of the transcripts equal attention. Initial codes were noted in a separate column alongside the extract in the transcript that it referenced.

After codes were created throughout the entire data set, they were extracted from the transcript and collated together in relation to their content or meaning. The resultant collections of codes were then analysed in relation to their prevalence within the data and their pertinence to the research questions and were identified as themes and sub-themes within the data. These were arranged into diagrammatic form (Thematic Map) based on their relationship to one another and the research questions.

In the next stage of the analytic process, emergent themes were reviewed and reorganised. Codes were checked for their relevance to the themes and consideration was given to the validity of the themes in relation to the entire data set. This process identified the similarities between a number of themes, leading them to be collapsed together.

Once final thematic maps were complete (see figures 1 & 2) the resultant themes were defined and named. Particular consideration was given to the simplest explanation for each and to ensure its relatedness to the research questions.

In the final analytic stage, the data were produced in report form. Themes were discussed in relation to the research questions and were substantiated by individual extracts from the original transcripts.

3.35. Ethical Considerations

Throughout the research process the researcher adhered to the current Code of Ethics and Conduct expressed by the British Psychological Society (BPS, 2009). This guide was used to inform the practical and theoretical decision making throughout the research process. The four key principles of respect, competence, responsibility and integrity were upheld and considered throughout.

The following steps were taken to safeguard the ethical legitimacy of the research:

- All participants were required to give informed consent at every stage of the study;
- For pupils completing the on-line questionnaire, a stipulation embedded within the computer programme ensured that no pupil was able to access the questionnaire before they had read the provided information regarding the purpose and nature of the study and agreed their consent to participate (see appendix D);
- For interview and focus group participants, the same information was provided in paper format prior to commencing discussion. Pupils were required to sign their consent (see appendices H & N) and were given additional time to ask questions of the researcher. No pupil was allowed to take part in the study without informed consent being provided;

- Within the letter of informed consent, pupils were informed of their right to withdraw from the study at any time. The data collection and analytic process was also explained and participants taking part in focus groups and interviews were advised that they could withdraw their data at any point up until transcription when their data would no longer be traceable to them individually;
- Following their completion of the study, all participants were debriefed in writing (see appendix E). The document used language suitable for their age and gave additional details regarding the purpose of the research. For participants completing the online questionnaire, the debriefing document was inserted into the programme at the end of the questionnaire. Pupils were required to agree that they had read and understood the information provided before their completion. The computer programme stipulated that no data could be stored unless pupils made a positive response;
- Due to the large number of participants eligible for participation in the online questionnaire, a process of assumed consent was followed. As such, a document was sent to all parents informing them of the nature of the research and the proposed involvement of their child (see appendix C). Parents were asked to respond only if they did not wish their child to participate;
- For participants engaging in the focus groups and interviews, direct parental consent was required. Consent letters were sent to parents (see appendices G & M) and the pupil was only eligible for participation once a signed consent form was received;
- In both schools where data collection took place, gatekeeper permission was also requested to allow for the research to be conducted within the school. A letter was sent to the head teacher of both schools prior to commencing the research requesting their permission for the research to be carried out. This letter included the purpose of the research and information regarding full methodological considerations (see appendix A);

- A number of steps were taken to ensure the confidentiality of online questionnaire data. Firstly, all the information collected was anonymous. No personal details were obtained that could be used to trace the individual respondent. Secondly, only the researcher had access to the data, which were stored within the computer programme which requires password access. Once analysis were complete, all data was cleared from the programme; and
- All recorded data taken from focus groups and interviews were transferred immediately (on school site) into audio file format and stored within a password-protected computer. When transcribed, this data were then made anonymous, removing all information regarding the personal details of the participant, and subsequently destroyed following completion of the transcription process.

3.36. Timeline

The following table (Table 5) outlines the timescale for all significant activities undertaken in the research process.

Table 5. Timescale for key activities undertaken as part of research

Date	Activity
September 2010	Initial literature Review & Formation of research questions.
October 2010	Initial contact made with members of MiSP. Discussion had regarding proposed project.
Jan 2011	Ethical Proposal submitted
Feb 2011	Ethical Approval granted

May 2011	Confirmation obtained of school Involvement
June 2011	<ul style="list-style-type: none"> • Gatekeeper and Parental consent forms distributed. • Pilot Study conducted in school A. • Link to on-line questionnaire distributed to pupils in school A.
July 2011	<ul style="list-style-type: none"> • Link to on-line questionnaire distributed to pupils in school B. • Focus groups and Interviews conducted in schools A & B.
August 2011	Transcription of recorded data.
September 2011	Analysis of data
October 2011	Commenced write up of research
Jan 2012	Submission of draft thesis
March 2012	Feedback received on draft thesis
May 2012	Final submission of complete thesis

CHAPTER 4: RESULTS

4.1. Overview of Chapter

The results considered herein are the product of a mixed methods research study investigating how secondary aged pupils perceive the impact of studying 'mindfulness' in school and the barriers to its successful implementation.

Data were obtained from multiple sources (online questionnaires, focus groups and semi structured interviews) following pupils completion of an 8-week mindfulness curriculum. Quantitative and qualitative data are integrated during the presentation of results, progressively revealing evidence pertinent to the study's research questions.

Unless stated otherwise, data obtained from online questionnaires reflects pupils' responses measured on a 5 point Likert scale regarding the perceived helpfulness of mindfulness techniques. It should also be noted that, all quotations displayed throughout the chapter are reported verbatim from pupils' responses to open ended questionnaire items and original interview and focus group transcripts.

Research Question One

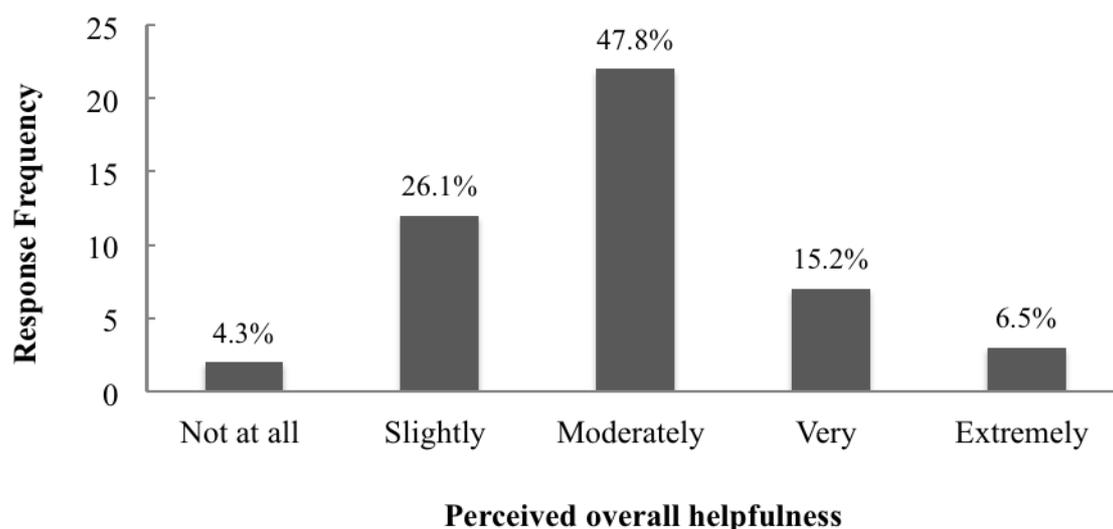
What are the self-perceived impacts for pupils of learning mindfulness in school?

- *Do boys and girls perceive impacts differently?*
- *Do pupils perceive impacts differently in State and Independent schools?*
- *Does the amount of time since pupils completed the MiSP course influence pupils' perceptions of it impacts?*

4.2. Perceived Overall Helpfulness of Mindfulness Practices

Quantitative Data

The results displayed in graph 1 show pupils' responses to question 1 of the online questionnaire. The majority of pupils perceived the techniques they had learnt during the eight-week mindfulness curriculum to be at least moderately helpful in their lives.



Graph 1: *Pupils' Perceptions of the Overall Helpfulness of the Mindfulness Practices Taught as Part of the 'b' curriculum.*

To compare pupils' perceptions based on their gender, school and the time since they had completed the curriculum (Cohort), frequency data were converted into rank form. The mean ranks for each group of pupils are shown in Table 6.

Independent Mann-Whitney *U* tests were conducted to examine differences between the mean ranks of each group. The results of the tests found no significant differences between pupils' responses based on their gender, school or cohort ($p > .05$).

Table 6: Mean Ranks of Pupils' Responses to Question 1 by Gender, School and Cohort.

Gender	N	Mean Rank
Boys	37	22.8
Girls	9	26.3
Total	46	

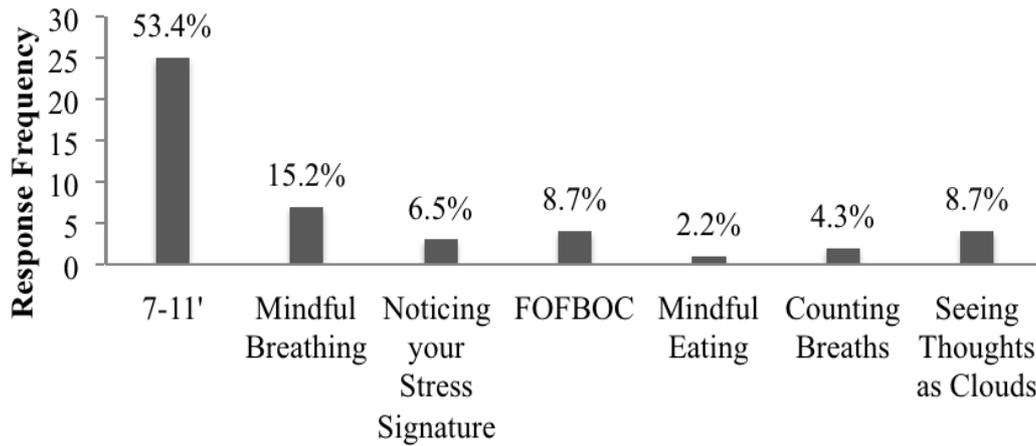
School	N	Mean Rank
School A	27	25.6
School B	19	20.5
Total	46	

Cohort	N	Mean Rank
Spring Term	24	23.8
Summer Term	22	26.2
Total	46	

4.3. Pupils' Preferred Mindfulness Technique

Quantitative Data

The results displayed in graph 2 show pupils' responses to question 3 of the online questionnaire. Over half of participants perceived the '7-11' technique to be the most helpful of the techniques they had learnt. Further cumulative analysis revealed that nearly three quarters of participants (74.8 %) perceived one of the three breathing-focussed techniques (7-11, Mindful breathing and Counting breaths) to be most helpful.



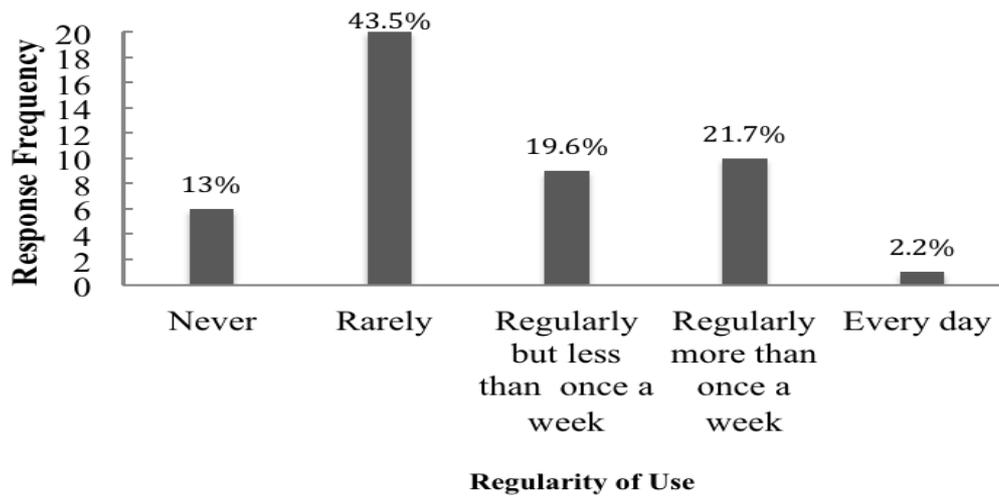
Mindfulness Technique

Graph 2: *Pupils' Perceptions of the Most Helpful Mindfulness Technique they learnt on the '.b' course.*

4.4. Regularity of Personal Practice

Quantitative Data

The results displayed in graph 3 show pupils' responses to question 2 of the online questionnaire. The majority of pupils reported rarely using mindfulness techniques in their lives. Of the pupils who did report regular use, ten reported using them more than once a week. Only one pupil reported daily use of mindfulness.



Graph 3: *The reported regularity with which pupils use the mindfulness techniques they learnt on the ‘.b’ course.*

In order to compare pupils’ responses based on their gender, school and cohort, frequency data were converted into rank form (see Table 7). Mann-Whitney *U* tests were conducted to evaluate whether the mean ranks of each group differed significantly. The results revealed no significant differences in pupils’ responses dependent on their gender, school or cohort ($p > .05$).

Table 7. Mean Ranks of pupils' responses to question 2 by gender, school and cohort

Gender	N	Mean Rank
Boys	37	23.2
Girls	9	24.8
Total	46	

School	N	Mean Rank
School A	27	20.4
School B	19	27.8
Total	46	

Cohort	N	Mean Rank
Spring Term	24	25.6
Summer Term	22	21.3
Total	46	

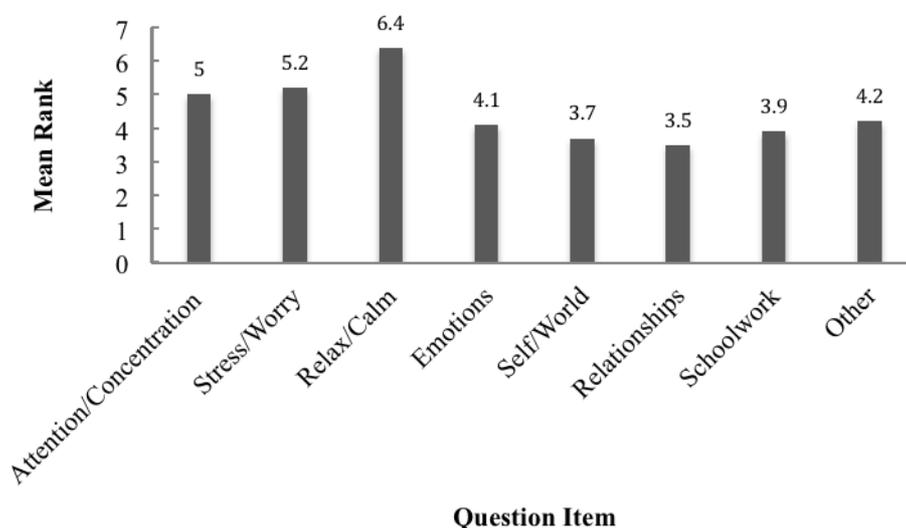
Qualitative Data

Analysis of interview data revealed that a number of pupils perceived mindfulness techniques as being specific coping strategies. Half of the pupils interviewed reported using mindfulness techniques when required in response to specific difficulties. As such, the regularity of their use was dependent upon its perceived need rather than its impact.

- *“Well I use it when I’ve got something that is making me worry or something that I need to just simplify” (Interview 5, p.17).*
- *“Yeah I don’t think I would use it to just like once a day or just to kind of concentrate because I only really think it helps when I’m concentrating on one thing. Like working or something like that” (Interview 1, p. 27).*

4.5. Perceived Impact on Psychological and Functional Variables

To compare pupils' responses to questions 4-11 of the online questionnaire, frequency data were converted into rank form (see Graph 4).



Graph 4: Mean Ranks of Pupils' Responses on Each Individual Questionnaire Item.

A Friedman's test was conducted to assess the differences between the mean ranks of pupils' responses for each questionnaire item. The results revealed a statistically significant difference in pupils' responses to the eight questions $X^2(7) = 63.955$, $p < .001$.

A Kendall's coefficient was also calculated to determine the strength of the relationship between pupils' responses to each question. A concordance 0.199 was found indicating a fairly high degree of variability between pupils' responses on each of the eight questions.

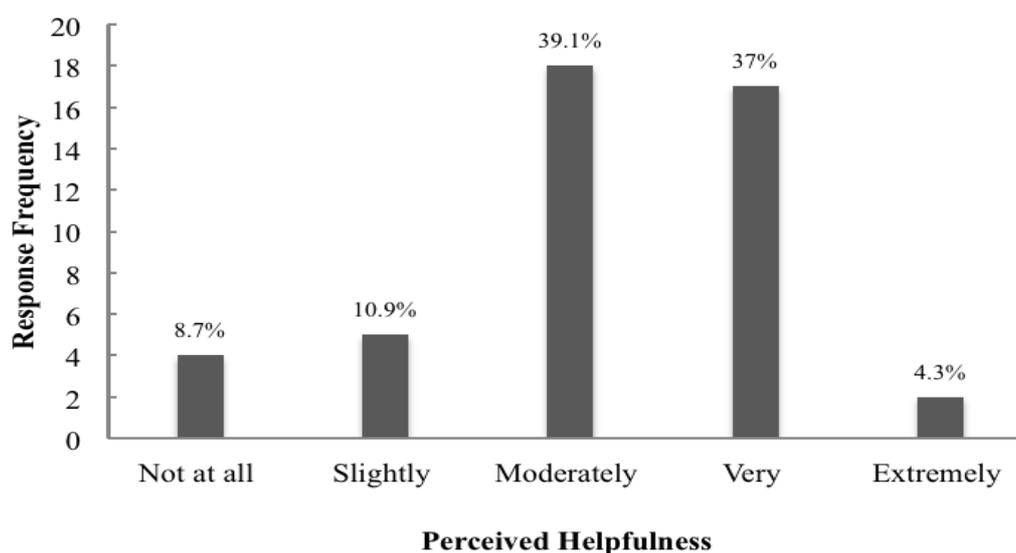
Subsequent post-hoc analyses were carried out to identify between which questions significant differences were apparent. Wilcoxon Signed-Rank tests were conducted with a Bonferroni correction applied, resulting in an adjusted alpha level of .002 per test (.05/28).

The results showed that pupils perceived mindfulness techniques to be significantly more helpful for inducing relaxation and calm than for any other variable ($p < .002$). No further significant differences were found between pupils' responses.

4.6. Perceived Impact on Attention and Concentration

Quantitative Data

The results displayed in Graph 5 show pupils' responses to question 4 of the online questionnaire. The majority (76.1%) of participants perceived mindfulness techniques to be either moderately or very helpful in enabling them to focus, concentrate and pay attention. Only four pupils reported that the techniques were not helpful at all in this regard.



Graph 5: *Pupils' Perceptions of how Helpful Mindfulness Techniques are for Staying Focussed, Concentrating and Paying Attention.*

In order to compare pupils' responses based on their gender, school and cohort, frequency data were converted into rank form (see Table 8). Mann-Whitney *U* tests were conducted and revealed no significant differences in pupils' responses dependent on their gender, school or cohort ($p > .05$).

Table 8: Mean Ranks of Pupils' Responses to Question 4 by Gender, School and Cohort.

Gender	N	Mean Rank
Boys	37	23.5
Girls	9	23.7
Total	46	

School	N	Mean Rank
School A	27	26.6
School B	19	19.1
Total	46	

Cohort	N	Mean Rank
Spring Term	24	22.7
Summer Term	22	24.4
Total	46	

Qualitative Data

Analysis of focus group and interview data generated the sub-theme of 'Attention Control'. Five interviewees and pupils in all focus groups reported that mindfulness techniques enhanced their ability to direct their focus and attention.

- "...I just like, for a couple of minutes just do a bit of mindfulness and it gets me focused on what I've actually got to do in the work" (Focus group 1, p. 13).

Similarly, a further six questionnaire participants and four interviewees reported the techniques to be helpful for sustaining attention and concentration. Pupils noted being less influenced by external distractions (e.g. noise) and also reported less frequent distracting thoughts.

- "It clears all my thoughts and helps me pay attention in lesson" (Participant 4).
- "When I do exercises, I can't hear anything. So it's like doing it and the world is silent" (Interview 8, p. 5).

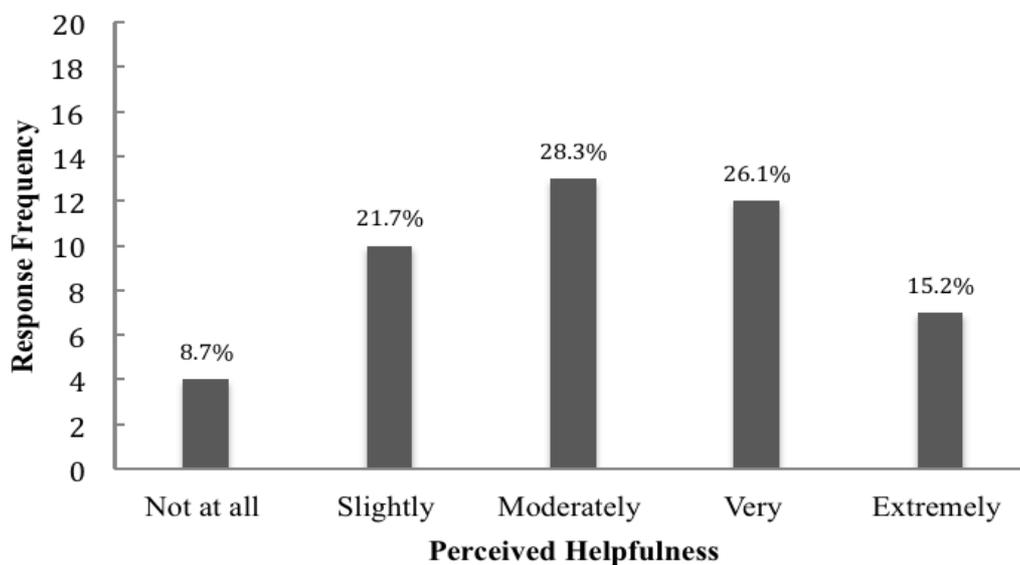
Two interviewees talked specifically about how mindfulness practices had helped improve their focus and attention when studying.

- “I sort of phase out of everything else and sort of kind of get into the work” (Interview 2, p. 17).
- “Um, you know in lessons and stuff when you’re not really listening that much and you start to wander... To then use the mindfulness stuff to just sort of realizing you’re doing that and then bringing yourself back” (Interview 1, p. 4 -5).

4.7. Perceived Impact on Stress and Worry

Quantitative Data

The results displayed in Graph 6 show pupils’ responses to question 5 of the online questionnaire. The majority (91.3%) of participants reported that mindfulness techniques were at least slightly helpful in enabling them to deal with stress and worry.



Graph 6: Pupils’ Perceptions of How Helpful Mindfulness Techniques are for Dealing with Stress and Worry.

In order to compare pupils' responses based on their gender, school and cohort, frequency data were converted into rank form (see Table 9). Mann-Whitney *U* tests were conducted to evaluate whether the mean ranks of each group differed significantly from each other. The results of the test revealed no significant group differences in pupils' responses dependent on their gender, school or cohort ($p > .05$).

Table 9: Mean ranks of pupils' responses to question 5 by gender, school and cohort.

Gender	N	Mean Rank
Boys	37	22
Girls	9	29.7
Total	46	

School	N	Mean Rank
School A	27	23.8
School B	19	23.1
Total	46	

Cohort	N	Mean Rank
Spring Term	24	23.9
Summer Term	22	23.1
Total	46	

Qualitative Data

Analysis of data revealed three ways in which pupils perceived mindfulness techniques to be helpful during times of stress and worry.

Firstly, they induced a sense of calmness amidst stressful situations. For example, one interviewee reported how the techniques had proved useful when hearing that their brother had been involved in a car crash. The pupil explained that, despite being concerned, their use of mindfulness techniques had enabled them to remain relaxed and respond calmly.

- *“...my dad called me up and said that my brother had been in a car crash... it was a shock but that was it and that kind of helped me not forget about it but sort of be a bit more relaxed about it which I thought was really useful”. (Interview 1, p. 13 -14).*

Secondly, mindfulness techniques appeared to help some pupils gain insight into the nature of their negative thinking patterns and the mental origins of their stress. These pupils talked of how coming to understand the transitory nature of their thoughts had helped them cope with stress and worry.

- *“Simply noticing when you are stressed stops you thinking how bad everything could go. Also you can focus on why you are stressed which helps you”. (Participant 25).*
- *“because now i know that my thoughts dont exised i didnt have to lisen to them”. (Participant 4).*

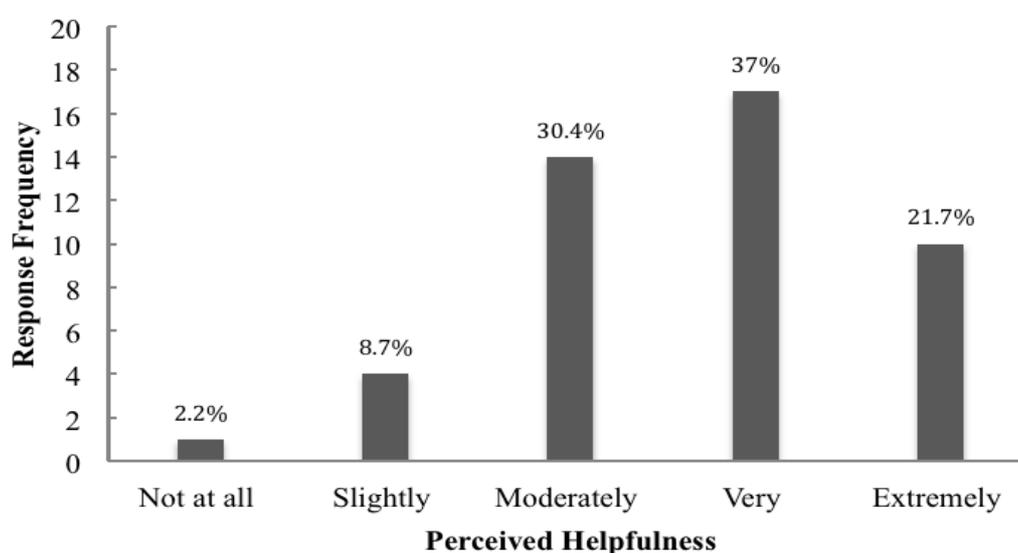
Finally, the application of mindfulness techniques also appeared to induce clarity of thought in some pupils, reducing the impact of negative cognitions associated with stress and worry.

- *“...using mindfulness helps because it gets stress out my mind and consentrate on other things” (Participant 15).*
- *“it puts me in my own world and blanks and clears my mind” (Participant 13).*

4.8. Perceived impact Relaxation and Calm

Quantitative Data

The results displayed in Graph 7 show pupils' responses to question 6 of the online questionnaire. Most pupils perceived mindfulness techniques to be at least moderately helpful in helping them to deal with stress and worries, with over half reporting the techniques to be either very or extremely helpful.



Graph 7: *Pupils' Perceptions of How Helpful Mindfulness Techniques are for Relaxation and Remaining Calm.*

In order to compare pupils' responses based on their gender, school and cohort, frequency data were converted into ranks (see Table 10). Mann-Whitney *U* tests were conducted to evaluate whether the mean rank of each group differed significantly from one another. The results of the test revealed no significant differences in pupils' responses dependent on their gender, school or cohort ($p > .05$).

Table 10: Mean Ranks of Pupils' Responses to Question 6 by Gender, School and Cohort.

Gender	N	Mean Rank
Boys	37	22.5
Girls	9	27.8
Total	46	

School	N	Mean Rank
School A	27	26.2
School B	19	19.7
Total	46	

Cohort	N	Mean Rank
Spring Term	24	23.2
Summer Term	22	23.9
Total	46	

Qualitative Data

Pupils in all three focus groups and all eight interviewees reported that the application of mindfulness techniques had a calming or relaxing effect. A further three interviewees and pupils in one focus group also reported that applying mindfulness techniques in lessons brought about a sense of calm within the whole group and created a positive atmosphere in the classroom.

- *“As in like, everyone was like calm and like really focused”. (Focus group 1, p. 3).*
- *“...I sit on my bed and I do ‘Seven – Eleven’ coz it helps me calm down”. (Focus group 3, p. 13).*

Further analysis revealed a diversity of contexts (acting, interpersonal disputes, sleep, temper problems, test nerves) in which pupils found mindfulness techniques to induce calm and relaxation. Five interviewees described how the application of mindfulness techniques helped them to relax before going to sleep.

- *“it just kind of helps you relax and it helps you get to sleep”*. (Interview one, p. 20).

A further two described how the techniques helped them to remain relaxed and calm prior to particular sporting activities. In particular, one interviewee reported that mindfulness had helped him control his heartbeat during a cricket match, enabling him to focus more effectively on his performance.

- *“Well with the batting, like just the stopping and breathing and slowing your heart beat a bit, helps me focus on the ball and my technique and stuff”*. (Interview 3, p. 6).

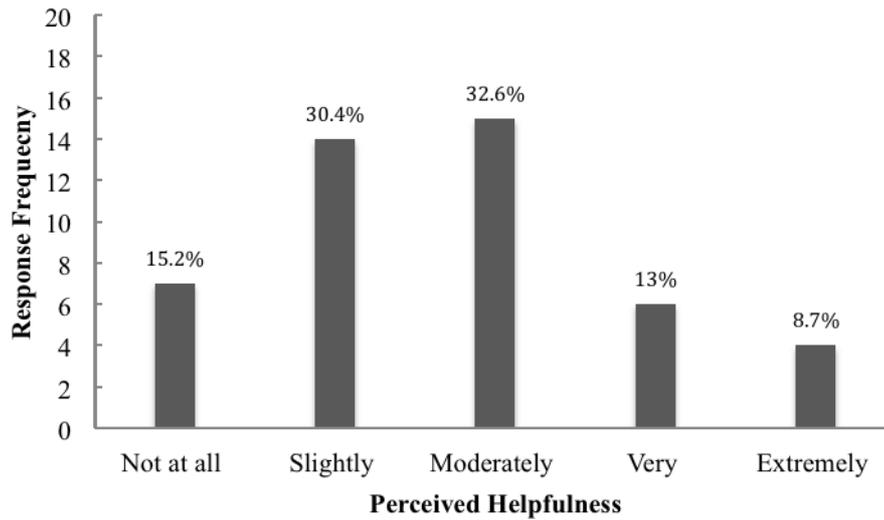
Finally, two interviewees described how mindfulness techniques had aided their ability to remain relaxed prior to performing on stage.

- *“I was in a play and it was very useful... just before I went on stage I think that made quite a lot of difference because you were calmer going in you weren't panicked about it”* (Interview 4, p.6).

4.9. Perceived Impact on Managing Emotions

Quantitative Data

The results displayed in Graph 8 show pupils' responses to question 7 of the online questionnaire. The majority (63%) of pupils perceived mindfulness techniques to be either slightly or moderately helpful in helping them to manage their emotions.



Graph 8: *Pupils' Perceptions of How Helpful Mindfulness Techniques are for Managing Emotions.*

In order to compare pupils' responses based on their gender, school and cohort, frequency data were converted into rank form (see Table 11). Mann-Whitney *U* tests were conducted to evaluate whether the mean rank of each group differed significantly from one another.

Results revealed that in comparison to boys, girls found mindfulness techniques to be significantly more helpful when managing their emotions ($z = -1.966$, $p = .049$),

Concomitantly, when compared to pupils completing the course in the Summer term, those completing in the Spring term found mindfulness techniques to be significantly more helpful when managing their emotions ($z = -2.017$, $p = .044$). No significant difference was found between pupils' ratings dependent on their school ($p = .133$ n.s).

Table 11: Mean Ranks of Pupils' Responses to Question 7 by Gender, School and Cohort.

Gender	N	Mean Rank
Boys	37	21.7
Girls	9	31.1
Total	46	

School	N	Mean Rank
School A	27	21.1
School B	19	26.9
Total	46	

Cohort	N	Mean Rank
Spring Term	24	27.2
Summer Term	22	19.5
Total	46	

Qualitative Analysis

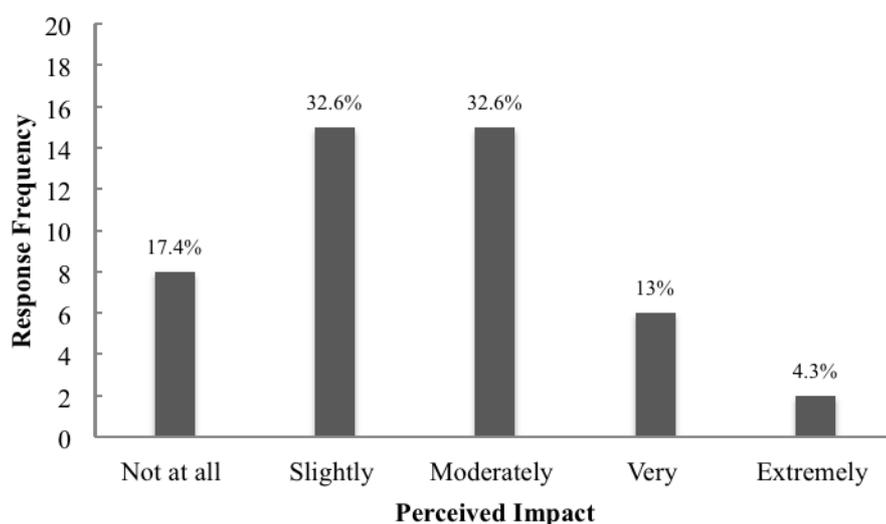
Analysis of qualitative data revealed that for a number of pupils, mindfulness techniques induced a sense of calm in response to negative emotions such as anger or frustration. For example, pupils in focus group three noted that techniques helped them to cope with negative emotions following interpersonal disputes.

- *“If I am angry 7-11 helps me to calm down” (Participant 7).*
- *Like it makes me like calmer and not to like shout out and disrupt other people and things”. (Focus group 3, p. 20).*

4.10. Perceived Impact on Pupils' View of the Self and the World

Quantitative Data

The results displayed in graph 9 show pupils' responses to question 8 of the online questionnaire. The majority (65.2%) of pupils perceived mindfulness techniques to have either slightly or moderately influenced the way they view themselves and the world.



Graph 9: *Pupils' Perceptions of How Much Impact Mindfulness Techniques have on the way they View Themselves and the World.*

In order to compare pupils' responses based on their gender, school and cohort, frequency data were converted into rank form (see Table 12). Mann-Whitney *U* tests were conducted to evaluate whether the mean rank of each group differed significantly from one another.

Results revealed that in comparison to boys, girls perceived mindfulness techniques to have more impact on the way they view themselves and the world ($z = -1.959$, $p = .05$). No significant differences were found between pupils' ratings dependent on their school or cohort for this questionnaire item ($p > .05$).

Table 12: Mean Ranks of Pupils' Responses to Question 8 by Gender, School and Cohort.

Gender	N	Mean Rank
Boys	37	21.4
Girls	9	31.4
Total	46	

School	N	Mean Rank
School A	27	22.6
School B	19	24.8
Total	46	

Cohort	N	Mean Rank
Spring Term	24	25.2
Summer Term	22	21.8
Total	46	

Qualitative Data

Analysis of qualitative datasets generated the theme 'Self transformation'. This reflects the perceptions of six interviewees and pupils in two focus groups that their experience of studying mindfulness had transformed the way they view themselves in some way.

Pupils in focus group two stated that learning mindfulness had given them a more positive view of themselves and made them more confident in their ability to tackle life stressors.

- *"I think it's kind of like made you appreciate yourself more. (Focus group 2, p 17).*

A further three interviewees expressed the opinion that learning mindfulness had made them more thoughtful and considerate in their actions. They noted an increased awareness of both the consequences of their actions and the negative outcomes associated with acting automatically or without thinking.

- *I think that like it has had some impact, coz I mean it's teaching you to like realise it's not worth being rash about everything and sometimes it's better to wait. (Interview 4, p.11).*

In addition, four interviewees perceived their experience of learning mindfulness to have made them more self-motivated and willing to make efforts to overcome challenges.

- *I don't know, I guess you care about it more if that makes sense. Rather than just thinking, 'I've got to do this, I've got to hand it in this date' I'd actually care about doing the work rather than getting the mark back if that makes sense. (Interview 2, p. 23).*

Another theme to emerge from qualitative analysis ('Perspective') reflects the perceptions of questionnaire participants, interviewees and pupils in all three focus groups, that studying mindfulness had altered their perspective on certain aspects of their life.

The subtheme 'Metacognition' reflects these pupils' perceptions that practising mindfulness has given them a better understanding of their minds and their habitual behaviour patterns. Some pupils reported that they were able to de-personalise negative thoughts, reducing their detrimental impact.

- *"Helps you to understand how traits of your brain like making stress/worries larger & larger - and how to prevent his" (Participant 17).*

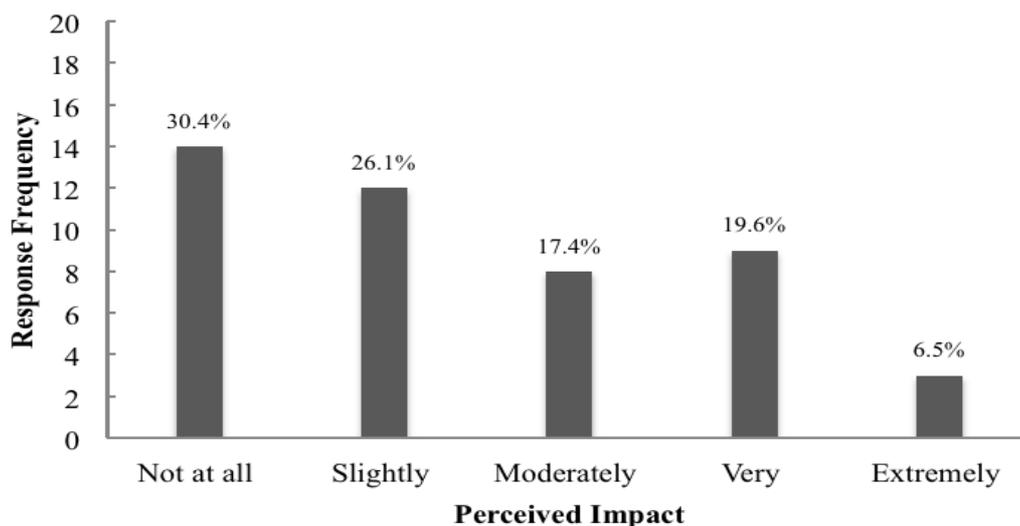
In addition, one interviewee also reported that they were more empathetic to others, and others (n = 2) reported being more aware of injustice and more appreciative of important global issues.

- *“realised that people are treating over people wrong and the world is dying because we are destroying it” (Participant nine).*
- *“Um, I guess it’s just helped me to stop and see if there was any reason why he did it and if he did it. Was it a reason that he did it to personally attack me or did he have things or did he really realise that what he was doing was to upset me?” (Interview, 6, p. 14-15).*

4.11. Perceived Impact on Inter-personal Relationships

Quantitative Data

The results displayed in Graph 10 show pupils’ responses to question 9 of the online questionnaire. The majority (56.5%) of pupils perceived mindfulness techniques to have been only slightly influential or not at all influential to the quality of their interpersonal relationships.



Graph 10: *Pupils’ Perceptions of how much Impact Mindfulness Techniques have on their Interpersonal Relationships (e.g. family, friends and teachers).*

In order to compare pupils' responses based on their gender, school and cohort, frequency data were converted into ranks (see Table 13). Mann-Whitney *U* tests were conducted to evaluate whether the mean rank of each group differed significantly from one another.

Results revealed that in comparison to pupils in school A, pupils in school B perceived studying mindfulness to have been significantly more influential to the quality of their interpersonal relationships ($z = -2.127, p = .033$).

Likewise, when compared to pupils completing the course in the Summer term, those completing in the Spring term found studying mindfulness to have been significantly more influential to the quality of their interpersonal relationships ($z = -2.142, p = .032$).

No significant differences were found between pupils' ratings dependent on their gender in for responses to this question ($p = .116$ n.s).

Table 13: Mean Ranks of Pupils' Responses to Question 9 by Gender, School and Cohort.

Gender	N	Mean Rank
Boys	37	22
Girls	9	30
Total	46	

School	N	Mean Rank
School A	27	20.1
School B	19	28.4
Total	46	

Cohort	N	Mean Rank
Spring Term	24	27.4
Summer Term	22	19.2
Total	46	

Qualitative Analysis

The sub theme 'Interpersonal Communication' emerged from analysis of qualitative data reflecting the opinion of a number of pupils, that applying mindfulness techniques had helped them to communicate positively with others.

Pupils' in focus group three (school B) and four questionnaire participants reported that the techniques enabled them to better regulate their emotions and to stay calm when they felt frustrated or angry following interpersonal conflicts.

- *"Well my brothers and sisters are always annoying me coz they are younger and like to take over things that I'm doing. so I usually do 'Seven - -Eleven' like three or four times and it usually calms me down so I don't cause an argument with them"* (Focus Group 3, p. 7).

Similarly, pupils in focus group one (School A) and one interviewee reported that studying mindfulness had helped them to recognise their own emotions better and to be more empathetic towards others.

- *“...that like it gives you new light on how other people behave. So it’s more... So if you see someone who’s like angry, or you can picture emotions much easier I think. Because you don’t have all the thoughts going round your head and you can see, you can like focus in on much more their emotion” (focus Group 1, p 18).*

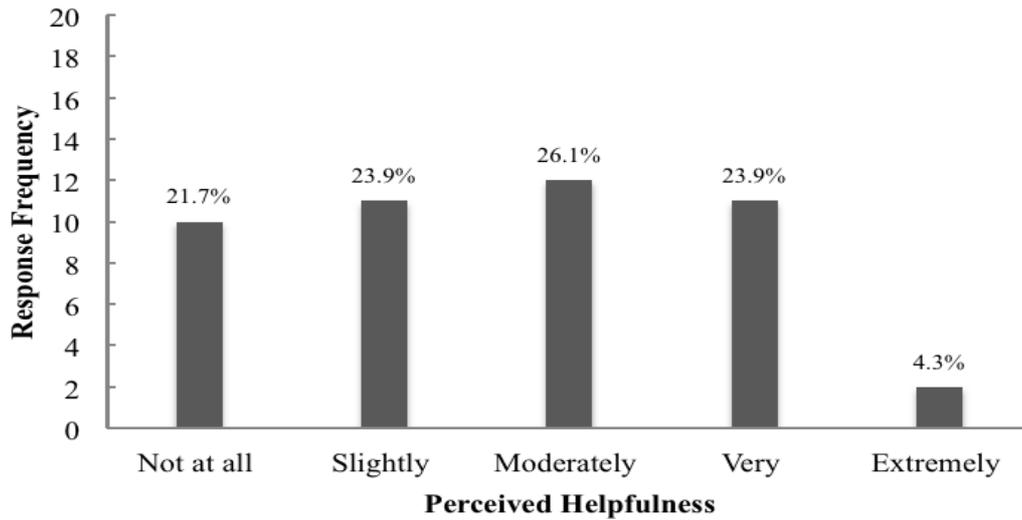
Three interviewees also expressed the opinion that using mindfulness techniques had enabled them to be more reflexive and to give greater consideration to their actions with regards to others.

- *“ it makes you really think about what your going to do and whether you want to stop doing that or carry on doing that. It just gives you the possibility to do that” (Interview 6, p. 12).*

4.12. Perceived Impact on School Work

Quantitative Data

The results displayed in Graph 11 show pupils’ responses to question 10 of the online questionnaire. Pupils’ responses displayed variability on this question. Similar numbers of responses were reported for each of the four lower likert scale response options.



Graph 11: *Pupils' Perceptions of how Helpful Mindfulness Techniques are for Completing Schoolwork.*

In order to compare pupils' responses based on their gender, school and cohort, frequency data were converted into ranks (see Table 14). Mann-Whitney *U* tests were conducted to evaluate whether the mean rank of each group differed significantly from one another.

When compared to pupils completing the 'b' course in the summer term, those completing in the spring term perceived mindfulness techniques to be significantly more helpful with regards to their schoolwork ($z = -2.036$, $p = .042$).

Likewise, compared to boys, girls also perceived the techniques to be more helpful with their schoolwork ($z = 2.193$, $p = .028$).

No significant differences were found between pupils' ratings dependent on their school in for responses to this questionnaire item ($p = .113$ n.s).

Table 14: Mean Ranks of Pupils' Responses to Question 10 by Gender, School and Cohort.

Gender	N	Mean Rank
Boys	37	22
Girls	9	29.8
Total	46	

School	N	Mean Rank
School A	27	20.9
School B	19	27.1
Total	46	

Cohort	N	Mean Rank
Spring Term	24	27.3
Summer Term	22	19.4
Total	46	

Qualitative Analysis

Analysis of all three qualitative datasets generated the subtheme 'Academic functioning'. This reflects pupils' perceptions that using mindfulness techniques helped them to function more effectively in academic situations, including classroom learning, test environments and with homework.

Three interviewees noted that that using mindfulness techniques had enabled them to be more time efficient with their homework and to better understand and retain information from lessons.

- *"It makes the prep that night a lot easier coz I could just remember everything that was said" (Interview 1, p.5).*

A further four interviewees mentioned that the techniques had helped them prepare for exams, enabling them coping with exam related stress.

- *“Well before tests, um... I do a ‘Seven – Eleven’ again coz I’m always worrying that I’m not going to pass... it just calms your mind down coz it’s stops the thoughts going mad and you just watch them going by” (Interview 7 p. 6).*

Four interviewees reported that learning mindfulness had made them more internally motivated and self-directed in their study. They reported a deeper level of engagement with learning tasks, learning for learning’s sake rather than learning to take tests.

- *“Actually think about what your doing and again that kind of helped me with my preps. I was actually doing it and actually thinking about it rather than just looking up the answers in the back of the book” (Interview 2 p. 22).*

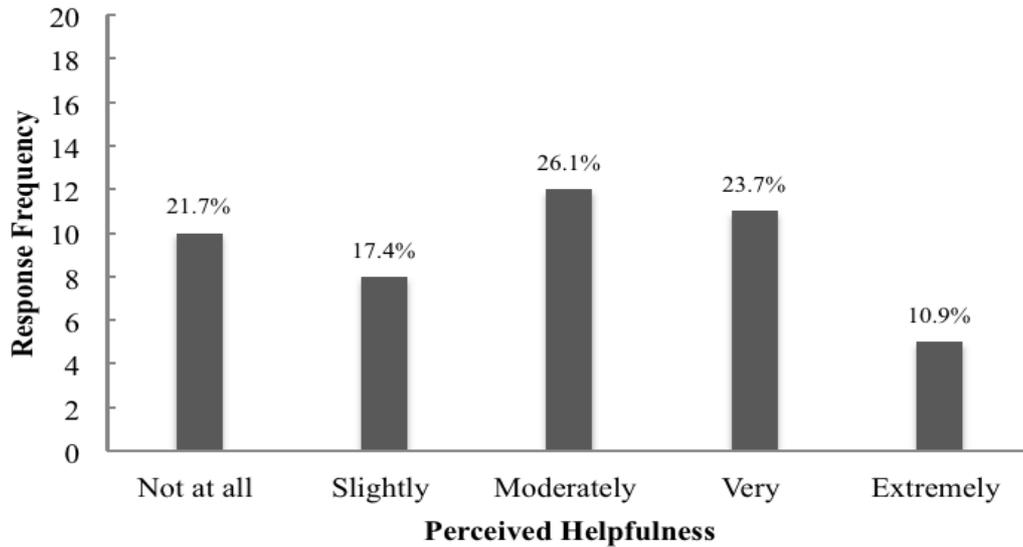
A small number of pupils also reported having higher academic aspirations as a result of learning mindfulness. These pupils felt that they gave more consideration to the way they approach their studies.

- *“I don’t know, I guess you care about it more if that makes sense. Rather than just thinking, ‘I’ve got to do this, I’ve got to hand it in this date’ I’d actually care about doing the work rather than getting the mark back if that makes sense” (Interview 2, p. 23).*

4.13. Perceived Impact on Extra Curricula Activities

Quantitative Data

The results displayed in Graph 12 show pupils’ responses to question 11 of the online questionnaire. Pupils’ responses show great variability in response to this question with similar frequencies being found across all likert response options.



Graph 12: *Pupils' Perceptions of How Helpful Mindfulness Techniques are for their Performance in Disciplines such as Music, Sport and Art.*

In order to compare pupils' responses based on their gender, school and cohort, frequency data were converted into ranks (see Table 15). Mann-Whitney *U* tests were conducted to evaluate whether the mean rank of each group differed significantly from one another. The results revealed no significant differences between pupils' ratings dependent on their gender, school or cohort in for responses to this questionnaire item ($p > .05$).

Table 15: Mean Ranks of Pupils' Responses to Question 11 by Gender, School and Cohort.

Gender	N	Mean Rank
Boys	37	23.4
Girls	9	23.9
Total	46	

School	N	Mean Rank
School A	27	25.4
School B	19	20.7
Total	46	

Cohort	N	Mean Rank
Spring Term	24	22.9
Summer Term	22	24.2
Total	46	

Qualitative Data

Analysis of data revealed sport to be the activity for which mindfulness techniques were perceived most helpful.

Pupils reported the techniques to be helpful both in mentally preparing for sporting activities and for enhancing their sporting performance. In particular, one interviewee perceived that their use of a mindfulness technique had enable them to persist longer during a running event.

- “Yeah I’d kind of ignore the finish line and just keep... coz yeah I would just ignore the how much further I’ve got to do. Ignore the people watching, ignore the person next to me who I’m trying to beat and just focus in on my own running” (Interview 2, p 33-34).

A further two pupils noted that the techniques enabled them to remain calm and relaxed prior to a sporting performance. These pupils also reported being better able to control unwanted thoughts related to the potential outcomes of their performance. As such, they helped them not to “overthink” their actions.

- *“It helps me stay calm before sports, allowing me to play better as I am not as nervous” (Participant 18).*

Two interviewees also noted that mindfulness techniques had been helpful for their acting performances. The pupils noted that the techniques calmed them down and enabled them to control their nerves about the performance.

- *“Err... I was in a play, and it was very useful, because one night I mucked up my lines and the second night I was very, very nervous about it. Just doing the ‘Seven – Eleven’, just basically just like that thinking like less about myself and just before I went on stage I think that made quite a lot of difference because you were calmer going in you weren’t panicked about it” (Interview 4 p. 6).*

4.14. Summary of Qualitative Data Analysis

The results of the thematic analyses conducted on focus group and interview data created a rich and interconnecting representation of pupils’ perceptions of the impacts of studying mindfulness in school (see Figure 1).

It should be noted that the emergent themes do not denote uniformity in pupils’ responses nor an established consensus of opinion. Rather, they reflect the diverse ways in which both individuals and groups of pupils construed how learning mindfulness impacted their lives.

The Thematic map (Figure 1) shows six main themes the names of which are chosen to best represent the information subsumed within them. In addition to the main themes, a number of sub-themes are also presented in order to provide structure and explanatory power to the main themes.

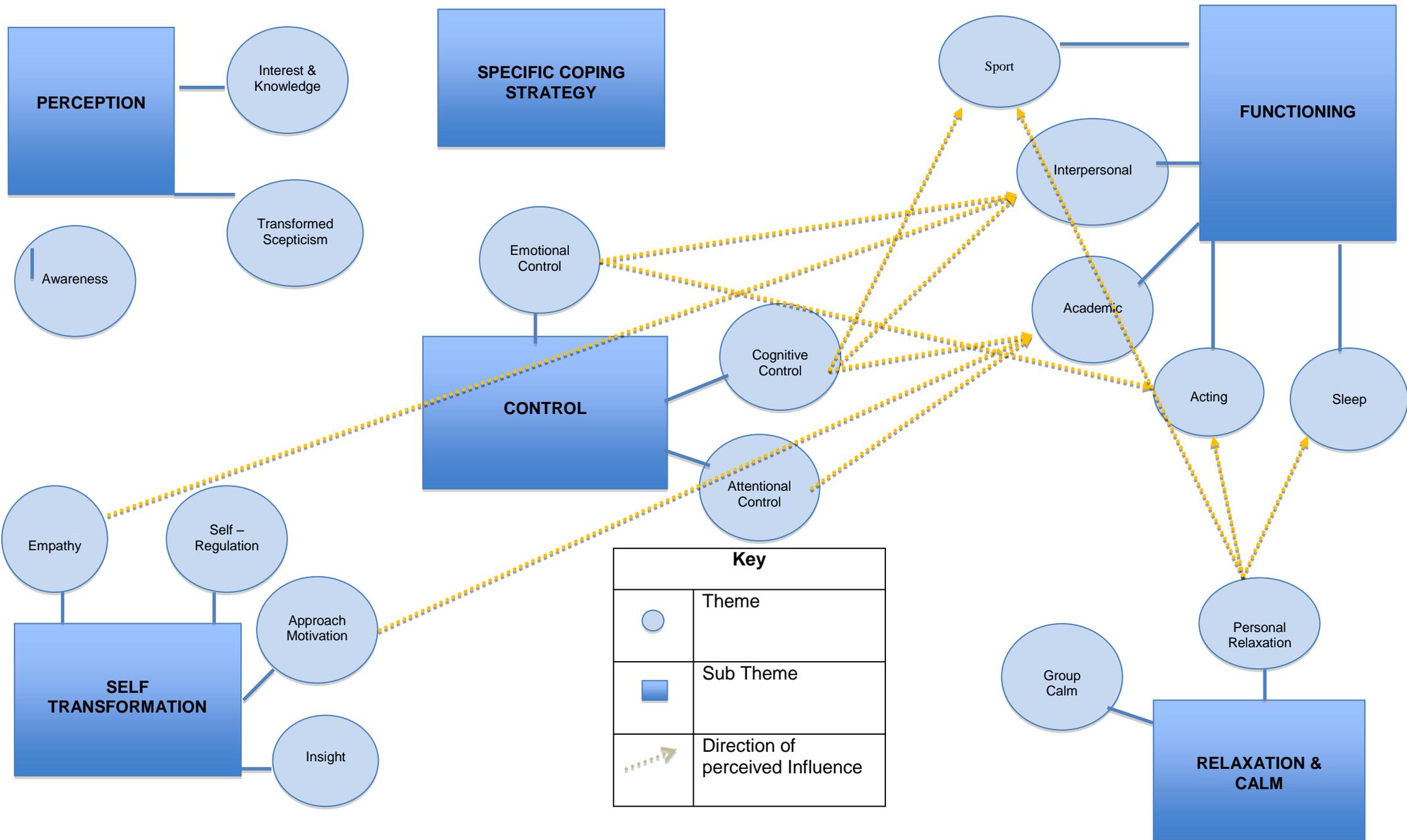


Figure 1: Thematic Map Representing Pupils' Perceptions of the Impact of Studying Mindfulness in school.

4.15. Theme One: Relaxation and Calm

As discussed previously, the theme 'Relaxation and Calm' emerged from analysis of all three qualitative datasets. This theme reflects the high number of pupils who reported that their use of mindfulness techniques had made them more relaxed and calm.

Two sub-themes also emerged from the datasets ('personal relaxation' and 'group calm') describing pupils' perceptions that mindfulness techniques not only induce a sense of personal relaxation but also created a calmer classroom atmosphere when practiced within in a class group.

- *As in like, everyone was like calm and like really focused (Focus group 1, p. 3).*

Across the datasets, pupils noted how their application of mindfulness techniques had helped them to remain calm amidst a range of situations. Pupils in Focus group three reported using the techniques to help them remain calm during interpersonal disputes, predominately with family members.

- *"When my granddad annoys me um I used to like... when he annoyed me I used to go up to my room and like get upset about it. But I use 'Seven - Eleven' now to help me calm down about it" (Focus group 3, p. 8).*

A number of interviewees also reported having used techniques in bed, enabling them to get to sleep more easily, particularly during times of stress, such as before exams or tests.

- *"When you're in bed it helps me not reminisce about the day over in bed, which can like keep you up for ages if you carry on doing that" (Interview 6, P.6-7).*

Two interviewees also reported using the techniques to induce relaxation in preparation for sporting or acting performances.

- *"Well with the batting, like just the stopping and breathing and slowing your heart beat a bit, helps me focus on the ball and my technique and stuff" (Interview 3, p. 6).*

4.16. Theme Two: Perspective

The theme “Perspective” reflects the high number of times within the qualitative datasets that pupils reported that learning mindfulness had impacted on their outlook on life in some way. The related sub-theme named ‘Alternative perspective’ refers to the perceptions of five interviewees and pupils in all three focus groups that learning mindfulness had given them an alternative perspective on certain aspects of their life. Some pupils reported having a greater appreciation of life in general and an increased awareness of their environment. Others reported being more aware of their present actions and felt they gave greater consideration to their present actions, rather than focusing on the past or future.

- *“it helped me notice that I do spend the majority of my life either in the past or the future and err... it really helped me remember that now is more important than what’s happening in the past or the future” (Interview 6, p. 2).*

The sub-theme ‘Interest and knowledge’ refers to the perceptions of six interviewees that studying mindfulness stimulated their personal interest in its principles and practices.

- *“um just the puppy mind thing was quite interesting. I hadn’t really thought about it before hand, how your mind wanders off and then you can bring it back but when he told us about it, it kind of made me think, oh yeah, I do that and it’s a way of concentrating again” (Interview 1, p. 44).*

A final sub-theme named ‘Transformed Scepticism’ refers to the opinions of a large number of pupils within focus group discussions and interviews that their experience of actually doing mindfulness techniques had positively transformed the prior cynicism they held regarding the effectiveness and utility of such practices for pupils.

- *“When we first started I found it hard and boring but when we actually got into it I found it was rather interesting and wanted to learn more about it” (Focus group 3, p. 3).*

4.17. Theme Three: Self-Transformation

As noted previously, the theme 'Self-transformation' reflects pupils' perceptions that learning mindfulness had changed the way they view themselves in some way. In particular, pupils in two focus groups felt that learning mindfulness had led them to see themselves more positively and had change their attitude towards aversive or difficult situations.

The sub-theme 'Approach motivation' depicts how four interviewees described having less desire to avoid difficult situations and increased confidence in their ability to deal with challenging issues.

- *"mindfulness has helped me to go with things that although they might not be the easy option they might be the best option for you personally" (Interview 6, p. 5).*

The sub-theme 'Empathy' describes how one interviewee felt that learning mindfulness had made them more empathetic and aware of the subtleties of how people display their emotions.

- *"Um, I guess it's just helped me to stop and see if there was any reason why he did it and if he did it. Was it a reason that he did it to personally attack me or did he have things or did he really realise that what he was doing was to upset me?" (Interview 6, p. 14).*

A further theme named "Self-regulation" refers to the perception of three interviewees that mindfulness techniques had made them more able to control their behaviour. This change was of particular relevance to interpersonal disputes were the pupils noted that they were more considerate of how others may perceive their actions and how this might influence the outcome of a situation.

- *"I think that like it has had some impact, coz I mean it's teaching you to like realise it's not worth being rash about everything and sometimes it's better to wait" (Interview 4, p. 11).*

The sub-theme 'Insight' refers to six interviewee's perceptions that mindfulness had given them a better understanding of the workings of their own mind. In particular, the pupils described having a heightened awareness of both the importance and difficulty of controlling their mind. These pupils noted that perceiving the transitory nature of their thoughts had made them less reactive to negative cognitions.

- *"like say, imagine your anger is a waterfall and you're stood behind the waterfall and you recognize that you're angry, but I think it's like a futile emotion so you just step back from it and um it generally helps you quite a lot" (Focus group 1, p.11).*

4.18. Theme Four: Control

A third theme to be generated from analysis of qualitative datasets was 'Control'. This theme reflects the regularity with which pupils described mindfulness techniques to have aided their ability to control a variety of psychological processes.

The subtheme, 'Cognitive control' reflects the opinions of all interviewees and pupils across all 3 focus groups that practicing mindfulness had enabled them to exert control over particular cognitive processes. In particular, the pupils described how applying mindfulness techniques had made them ruminate less about exams or other stressful issues preventing them from sleeping. They also noted having more clarity of thought and experiencing less intrusive thoughts.

- *"I used to feel like things that were on your mind. You could never quite turn them all off, but I think with mindfulness, because you like accept that they're there you accept that they're happening but you don't get flustered about them" (Interview 4, p.6).*

Three pupils also reported that their use of mindfulness techniques had prevented them from catastrophizing thoughts, interpreting things more negatively than they actually are. In contrast, these pupils mentioned that they were able to positively reframe information.

- *"Well it just calms your mind down coz it's stops the thoughts going mad and you just watch them (thoughts) going by" (Interview 7, p. 6).*

The sub-theme 'Attentional control' reflects the perceptions of six interviewees and pupils in all focus groups that using mindfulness techniques had enabled them to exert more control over their attention, making them more able to both focus their attention on tasks and to concentrate for longer. Pupils noted being less influenced by both internal and external distractions.

- *“Just that I kind of cleared... what I was thinking so I was just concentrating on what needed to be done and I felt easy like my mind didn't wander as much” (Interview 1, p.10).*

A final sub-theme ('Emotional Control') was generated from analysis of data collected during focus group three. During the discussion pupils reported that their use of mindfulness techniques had helped them control their emotions. In particular, the pupils reported having more control over feelings of frustration and anger towards other people during a interpersonal disputes.

- *“I no longer let my emotions take control of me...” (Focus group 3, p.19).*
- *“so I usually do 'Seven - -Eleven' like three or four times and it usually calms me down so I don't cause an argument” (Focus group 3, p.7).*

4.19. Theme Five: Functioning

The theme 'Functioning' refers to the range of contexts in which pupils across all qualitative datasets perceived mindfulness to aid their ability to carry out of a particular activity in some way.

The sub-theme 'Acting performance' makes reference to how a small number of interviewees felt that mindfulness techniques had been of use during acting performances. These pupils reported feeling calmer and less nervous about their performance.

- *“...just basically just like that thinking like less about myself and just before I went on stage I think that made quite a lot of difference because you were calmer” (Interview 4, p. 6).*

A second sub-theme named 'Interpersonal communication' reflects the opinions of three interviewees and pupils in two focus groups that their use of mindfulness techniques had helped them to be more empathetic and considerate towards others. A large number of the incidences described were related to familial disputes.

- *"...when I learnt mindfulness I kind of accepted and thought "well I've done this, if I talk to her about doing that then maybe she'll understand" (Interview 8, p. 6).*

The sub-theme 'Academic functioning' makes reference to the opinions of five interviewees and pupils in all three focus groups, that practicing mindfulness had helped them during tests, whilst carrying out their homework and whilst learning in the classroom.

- *"I was actually doing it and actually thinking about it rather than just looking up the answers in the back of the book" (Interview 2, p.22).*

The last two sub-themes named 'Sleep' and 'Sporting performance' reflect the perception of a number of pupils that using mindfulness techniques helped them to get to sleep and had improved their sporting performances. In general, these pupils perceived such benefits to reflect a reduction in the amount of intrusive and ruminative thoughts that they experienced.

- *"So like 'Beditation' helped me get to sleep and um sort of learning to sort of focus on the environment around me sort of helped with sport as well" (Interview 3, p. 6).*

4.20. Theme Six: Specific Coping Strategy

The theme 'Specific Coping Strategy' was generated to reflect the prominent opinion amongst pupils that mindfulness techniques are most applicable as coping strategies that reduce the impact of certain stressors.

Rather than employing mindfulness techniques on a regular basis as part of an ongoing practice, pupils reported using them as and when they need in response to certain life stressors.

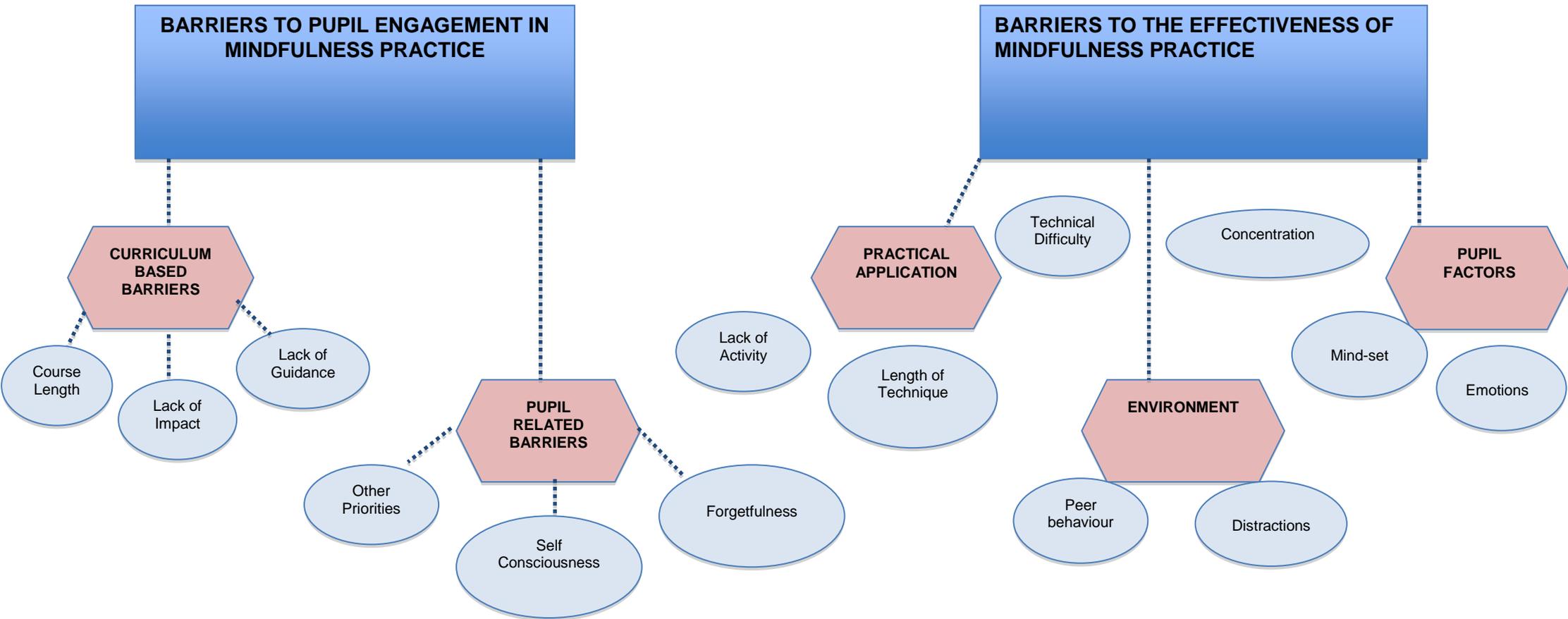
- *“So I think mindfulness is an asset that you can use against stress or just the complexity of life in general. That will make you able to deal with life in the best way possible and make you more able to live your life at a better rate than err, what you do if you let stress take over” (Interview 6, p. 26).*
- *“but it just gives you that extra option like another way of coping with something, so I think its good” (Focus group1, p.17).*

4.21. Evidence pertinent to research question 3

What do pupils perceive to be the barriers to practicing mindfulness?

In order to examine pupils’ perceptions of the barriers to practicing mindfulness, the results of only qualitative analyses are discussed. In addition to thematic analyses of focus group and interview transcripts, additional data were obtained from pupils’ response to question 14 of the online questionnaire.

The resulting themes and subthemes are presented in Figure 2 offering a visual representation of the breadth and depth of pupils’ perceptions. To aid interpretation of the findings, the results are described in relation to two aspects of pupils’ responses. Firstly data are discussed in relation to pupils’ perceptions of the barriers preventing them from engaging more regularly in mindfulness practice. Secondly, data are considered regarding pupils’ perceptions of the barriers limiting the effectiveness of the techniques they had learnt.



Key	
	Overarching aspect of pupils responses
	Theme
	Sub Theme

Figure 2: Thematic Map Representing Pupils' Perceptions of the barriers to practicing mindfulness.

4.22. Issues relating to the perceived barriers to engagement in mindfulness practice

Analysis of qualitative data generated two themes describing pupils' perceptions of the barriers to their engagement in mindfulness practices. These themes refer to barriers inherent in the content and delivery of the MiSP curriculum and barriers relating to pupils' themselves and the application of the techniques they learnt.

4.23. Theme 1: Curriculum Related Issues

A number of pupils perceived certain aspects of the content and delivery of the ' . b' curriculum to prevent them from engaging more regularly in mindfulness practice.

The sub-theme 'Course length' reflects pupils' perceptions in two of the three focus groups that the course was too short for them to fully understand the concepts and techniques taught within it.

- *"I don't think that a one term course can have that much of an effect on how you behave. But I think for people who have been doing it for a long time they can sort of be mindfully subconsciously. But if like I'd have to sort of concentrate on the mindfulness and really be aware of it being there. Most of the time I just forget about it" (Focus group 1, p.20).*

In addition, the related sub-theme 'Lack of guidance' refers to four interviewees' opinions that their limited use of the techniques was due in part to a need for additional guidance in how to perform the practices outside the classroom. These pupils felt that the duration of the course was not long enough for them to develop the skills they require to perform the techniques without further guidance.

- *"...he (teacher) was going through all the bits to go through...whereas when you're at home or something that it's a lot harder to focus on it" (Interview 4, p. 3).*

A sub-theme related to the content of the course was named 'Lack of Impact'. This theme describes the perceptions of three interviewees that some of the techniques they had learnt made little impact on them. As a consequence, these pupils reported being insufficiently motivated to practice the techniques outside of the classroom.

- *"it didn't really feel like it made any difference so then I did it a few other times when I thought I had to do it coz it was prep but I didn't really find it very helpful coz I found it just frustrating that it wasn't working for me (Interview 1, p.39).*

4.24. Theme 2: Pupil Related Issues

A number of pupils perceived certain personal qualities and personal attitudes to be influential in preventing engagement in mindfulness practices.

The sub-theme 'Forgetfulness' reflects the opinions of three interviewees and pupils in all three focus groups that, although helpful, they often do not think about applying mindfulness techniques in their daily life.

- *"I've used it once and then I probably just forgot about it, but it did work" (Focus group 1, p.8).*
- *"Well I don't really have the time and I don't really think about using it. So..." (Focus group 2, p. 8).*

Likewise, pupils in two focus groups reported that they had 'other priorities' and that practicing mindfulness was not important to them at this stage in their lives. Of these pupils, some reported that pupils their age had other activities they would rather do than practice mindfulness. Others felt that they were too busy to practice the techniques that they learnt.

- *Um yeah I'd like to, but I find that taking the time like a couple of minutes I cant really do that so" (Interview 3, p.10).*
- *I'm not sure whether you know like the average 14 year old would be thinking about how to help themselves if it meant giving up 40 minutes of time maybe playing football (Focus group 2, p. 22).*

Another barrier faced by some interviewees was that of self-consciousness. Some pupils reported feeling particularly concerned about how other people would perceive them if they were aware that they were practicing mindfulness. In particular some pupils reported that they did not want to be seen to be the only person doing the practices.

- *Yeah coz if you're the only one in the class really concentrating and everybody else isn't listening then you don't want to be the only person sitting there focused... (Interview 6, p. 28).*

A further issue raised by pupils across all three datasets was that they had no desire to practice mindfulness techniques unless they were faced with a specific difficulty. The pupils reported that whilst content and under little stress, the techniques were of little relevance and only became helpful in response to particular life stressors.

- *Yes it's if there are more pressurey things going on you're more likely to want to focus on it than if there's not pressurey stuff" (Interview 4, p.5).*
- *Yeah so as I've said, I'll probably... when I've got something that I'm worried about then I'll probably use it more" (Interview 5, p.20).*

4.25. Issues relating to the perceived barriers to the effectiveness of mindfulness techniques

Analysis of qualitative data generated three themes describing pupils' responses relating to the perceived barriers to the effectiveness of mindfulness techniques they had learnt. These themes refer to the perceived barriers relating to the practical application of the techniques themselves, environmental factors surrounding their application and personal factors relating to pupils themselves.

4.26. Theme 1: Practical Application of Techniques

A number of interviewees (n = 5) noted that some of the techniques taught on the course were particularly challenging to carry out. They did not feel skilled enough to perform them correctly and hence they perceived them to have little impact. Similarly, some other pupils reported that the more lengthy meditative practices they had learnt and those practices requiring considerable effort to perform were less effective than those they could perform with relative ease. As such, many pupils perceived that the length of time required to perform a technique was negatively related to the amount of impact it exerted.

- *I think that could perhaps put people off they just think I can't do it so it can't be an actual thing (Interview 2, p.29).*
- *"... It takes quite a long time with the audios to be effective because it takes quite a long time It means that I don't always think" (Interview 1, p.37).*
- *"I guess, but I kind of did that for a while but it just took too long to eat anything (Mindful eating)" (Interview 2, p.21).*

Pupils in focus group three also reported that the lack of physical activity associated with most of the techniques made them less appealing and less effective for pupils of their age. Some pupils reported that it was difficult to sit quietly for long enough to perform some techniques without feeling bored and agitated. These pupils felt that the techniques would be more effective if they involved more physical activity.

- *"because we just sit down and we just do like stuff... it would be quite good if we could do like some drama on it or stuff like that" (Focus group 3, p.21).*

4.27. Theme 2: Environmental Factors

A theme emerging from analysis of two focus groups ('Impact of environment'), reflects a number of pupils' opinions that the effectiveness of certain techniques is dependent upon the environment in which they are carried out. These pupils referred to factors such as limited space and noises as being detrimental to the impact of some techniques.

Similarly, analysis of interview data revealed the subtheme 'Distractions; referring to pupils' perspectives that external distractions such as noise reduced the impact of some techniques.

- *"Yeah like when you're distracted by something, like a car or something and someone laughs and you laugh as well" (Focus group 2, p.2).*
- *"some people could do it, but I found it really difficult like, every noise I heard I was like that, so like yeah I was..." (Interview 5, p.6).*

Some of these pupils perceived the behaviour of their peers as an influential factor in reducing the impact of techniques. They felt that the presence of their peers whilst carrying out techniques distracted them from the techniques and hence reduced their impact.

- *"I quite enjoyed it, but I struggled with the other people sort of not getting along with it. Sort of misbehaving" (Interview 3, p.1).*

4.28. Theme 3: Pupil factors

A number of interviewees also noted that their own level of engagement was related to the effectiveness of the techniques they had been taught. These pupils reported that they needed to be in the right mind-set or to have the correct attitude to be able to concentrate and get the most out of the techniques.

- *"I found it quite hard at the beginning sort of yeah. Sort of starting off, getting into the mind-set" (Interview 3, p.5).*

Related to this, some pupils reported having personal difficulty in concentrating whilst performing the techniques. These pupils found it difficult to maintain their concentration for long enough to carry out some of the techniques they had learnt appropriately.

- *“It’s just like hard to concentrate when there’s like loads of stuff you can think about. But you can’t think about it, you have to let it pass your mind” (Focus group 3, p. 2).*

Pupils in focus group three also noted having particular difficulties overcoming certain emotional responses whilst performing some of the techniques. The pupils felt that the effectiveness of techniques was reduced as they became bored and frustrated whilst attempting to carry out the practices.

- *“I don’t know, I try to do my breathing but then I just get frustrated with the breathing coz it takes sooooo long” (Focus group 3, p.15).*

4.29. Overview of Results.

The results of this study suggest that mindfulness was generally perceived by most participants to be at least moderately helpful. However, the majority of pupils reported rarely using the mindfulness techniques they had been taught outside of lessons. Of the techniques the pupils did use, the 7-11 breathing technique was reported to be the most helpful.

Pupils perceived mindfulness techniques as being most helpful in enabling them to relax and stay calm. This impact was reported to be valuable for pupils in a broad range of scenarios (e.g. completing schoolwork, sporting and acting performances, sleep and interpersonal relationships).

Comparative analyses based on pupils’ gender, school and cohort revealed differences in pupils’ responses. Compared to boys, girls perceived mindfulness techniques to be significantly more helpful for managing their emotions, aiding them with their schoolwork and changing the way they view themselves and the world around them.

Similarly, when compared against pupils completing the ' . b' course in the summer term, pupils completing the course in the spring term perceived mindfulness techniques to be significantly more helpful for managing their emotions and aiding them with their schoolwork.

Furthermore, in comparison to pupils in school A, pupils in school B perceived studying mindfulness to have been significantly more influential to the quality of their interpersonal relationships.

Although analyses of the online questionnaire data showed that learning mindfulness had only a moderate impact, analyses of qualitative data revealed great variability in pupils' responses. Pupils' perceptions of the impacts of learning mindfulness can be categorised into six main themes: Specific Coping Strategy, Relaxation and Calm, Perception, Self-Transformation, Functioning, Control.

Rather than being seen as an ongoing personal practice, most pupils perceived mindfulness as a specific coping strategy to employ in response to specific difficulties or issues and that is useful in a range of scenarios (sports performances, academic performances, acting performances, sleep and interpersonal relationships).

Additionally, for some pupils' mindfulness training was reported to have brought about a degree of self-transformation and led them to experience a change in the way they perceived themselves and the world around them. Pupils also reported that practising mindfulness gave them greater control over mental processes, such as attention, cognition and emotion.

Pupils' perceptions of the barriers to studying mindfulness in school can be split into two key areas. Firstly, they discussed barriers relating to their personal engagement in mindfulness practices and secondly, they discussed general barriers to the perceived effectiveness of the techniques they had learnt.

Barriers relating to pupils engagement in mindfulness practices were found to be associated with either the .b curriculum (e.g. course length, perceived lack of guidance and limited impact) or the pupils themselves (e.g. self-consciousness, forgetfulness and other priorities).

Similarly, perceived barriers relating to the effectiveness of mindfulness techniques were found to be associated with the practical application of techniques (e.g. technical difficulty, length and activity), environmental distractions (e.g. external distractions and peer behaviour) and personal difficulties carrying out the practices (e.g. concentration levels, emotional response and mind-set).

CHAPTER 5: DISCUSSION

5.1. Overview of Chapter

In this chapter consideration is given to the limitations of the current research. Findings pertinent to the study's research questions are discussed and reference is made to the theoretical and empirical literature identified in the literature review.

5.2. Discussion of Pertinent Findings

The findings of this research provide a rich analysis and explanation of how secondary school pupils perceive the impact of studying 'mindfulness' in school and the barriers to its successful implementation. The combination of both quantitative and qualitative data serves to expand the breadth and depth of discussion in identifying a variety of pertinent findings in relation to the study's research questions.

Analyses of quantitative data revealed that the majority of pupils perceived mindfulness as being moderately helpful in their lives. Of all the potential impacts considered, it was found that pupils perceived mindfulness to be most helpful for staying calm and relaxed.

Although pupils reported rarely using the techniques they had been taught outside of the classroom, they noted that the breathing-based techniques were the most helpful. Further exploration of data using qualitative analysis revealed that pupils saw mindfulness techniques as specific coping strategies to be employed in relation to specific issues or scenarios. As such, pupils did not perceive a need for a regular practice of mindfulness.

Analyses of qualitative data revealed significant variation between pupils' perceptions of the impacts of learning mindfulness. Six main themes emerged from qualitative analyses describing how mindfulness practices were perceived by pupils to influence the way they see themselves, others and the world around them. In particular, the pupils reported being more relaxed and calm, being better able to control mental processes (e.g. emotions, cognitions and attention) and being able to function more effectively in a range of scenarios.

The pupils also noted a number of barriers both to their engagement in mindfulness practices and to the effectiveness of the techniques they learnt. These barriers were related to the .b curriculum, the pupils' environment and/or individual factors relating to the pupils themselves (e.g. self consciousness and forgetfulness).

To the best of the authors' knowledge, the results are the first in the academic literature to provide in-depth qualitative analysis of data regarding the perceived psychological and psychosocial impacts related to pupils' application of mindfulness-based practices. Similarly, the findings also offer new insight into pupils' perceptions of the barriers associated with their engagement with mindfulness-based practices and the impact they may potentially exert.

The results of this study will be of particular interest to academics in the field of mindfulness and professionals such as educational psychologists (EPs), teachers and curriculum developers who seek to assess the applicability and impact of school based initiatives aimed at promoting the social and emotional wellbeing of pupils in schools.

The two research questions guiding the investigation are set out below:

Question 1. What are the self-perceived impacts for pupils' of learning mindfulness in school?

- *Do boys and girls perceive impacts differently?*
- *Do pupils perceive impacts differently in State and Independent schools?*
- *Does the amount of time since pupils completed the MiSP course influence pupils' perceptions of it impacts?*

Question 2. What do pupils perceive to be the barriers to practicing mindfulness?

5.3. Perceived Overall Helpfulness

The results of this study tentatively support the feasibility and applicability of teaching mindfulness-based practices to secondary age school pupils. None of the pupils participating in the study reported any detrimental effects of their participation in the 'a. b' course or of the practices taught within it. Furthermore, analysis of qualitative data identified that a number of pupils felt that their experience of learning mindfulness had transformed their initial scepticism surrounding meditative practices. Some also reported having developed a particular interest in mindfulness and wished to continue learning about it in the future.

Analysis of the quantitative data revealed that overall, the mindfulness-based practices taught as part of the eight week 'a. b' curriculum were perceived by the majority of pupils (n= 32, 69.5%) to be at least 'Moderately' helpful.

This marginal impact is consistent with the moderate effect sizes reported previously in the prior investigations into mindfulness-based interventions in secondary schools (Schonert-Reichl & Lawlor, 2010; Huppert & Johnson, 2010; Broderick & Metz, 2009).

However, considerable variability was found in pupils' responses. A number of participants reported the techniques to be either 'Very' (n=7, 15.2%) or 'Extremely' helpful (n=3, 6.5%), whilst others found them 'Not helpful at all' (n=2, 4.6%). Such variability is consistent with previous research findings, which highlight the distinct individual differences in relation to the impact of mindfulness-based interventions with secondary aged pupils (Huppert and Johnson, 2010).

5.4. Frequency of Use

Analysis of questionnaire data found that the majority of participants (n= 26, 56.5%) reported 'Never' or 'Rarely' using the mindfulness techniques they learnt as part of the 'a. b' curriculum outside of the context of their lessons.

These findings are consistent with the results of previous research reporting a similarly low frequency in the rate of which pupils personally practice mindfulness (Huppert & Johnson, 2010). The findings also indicated that the more pupils practiced mindfulness at home, the greater the change that was subsequently found on a measure of their wellbeing.

The qualitative findings of the current study may serve to clarify some of the reasons for this observed low rate in pupils' personal mindfulness practice. Thematic analysis of focus group and interview data identified that for some pupils the eight-week 'b' course was perceived as being too short for them to develop skills they need to successfully carry out mindfulness practices on their own. Similarly, other pupils felt that they required more guidance and support to perform particular techniques they had learnt outside of the classroom.

These findings may be relevant to the future development of mindfulness curricula in schools. In particular, the length and delivery of the course may require revision in order that more pupils feel equipped and able to carry out mindfulness practices alone following the conclusion of the course. Certain pupils may also need additional guidance and support after their completion of the course to help them to maintain and develop the skills they have learnt.

5.5. Specific Coping Strategy

In addition to the influence of course length on pupils' home practice, a number of pupils perceived their limited use of the practices to reflect a lack of need rather than a lack of ability.

These pupils referred to their application of mindfulness techniques as being a specific response to particular life stressors. As such, their low rate of personal practice may be associated with the infrequency or triviality of the particular problems they face at any one time rather than reflecting any perceived ineffectiveness or dislike of mindfulness-based practices.

These findings may substantiate the findings of Huppert and Johnson's (2010) research, which identified that pupils' baseline levels of wellbeing were influential to the resulting impact of the mindfulness intervention. It may therefore be that pupils who perceive themselves as facing either a high number or particularly complex difficulties may be more likely to regularly practice and utilise the mindfulness techniques they have learnt.

Such results may also serve to identify an inherent challenge regarding the application of mindfulness interventions within non-clinical samples. It may be that for individuals demonstrating clinical levels of psychological disturbance, the perceived need to practice techniques may be much higher than that of individuals from a 'normal population'. Hence, these individuals may practice more and experience more benefit from such intervention.

In contrast, it may be more difficult to encourage individuals from a 'normal population' to engage in the personal use of mindfulness practices if they do not perceive themselves as having any difficulties to resolve. This issue may present a challenge for future studies of mindfulness interventions within normal populations, particularly those where the participants are not volunteers.

5.6. Most Helpful Mindfulness Techniques

Results from the analysis of online questionnaire data demonstrate that the majority of pupils (n= 25, 53.4%) perceived the '7-11' technique to be the most helpful of all the practices they learnt on the 'b' course. This technique is a simple breathing exercise requiring the pupil to focus on inhaling for 7 seconds and exhaling for 11 seconds. Additionally further exploration of the data revealed that almost three quarters of pupils (72.9%) perceived one of the three breathing techniques ('Mindful breathing', '7-11' and 'Counting breaths') as being most helpful.

These findings offer some support for previous research carried out by Barnes et al. (2004) who demonstrated the positive impact of a similar breathing meditation on pupils' blood pressure and resting heart rate.

In considering these results, an analysis of qualitative data suggested that a number of pupils perceived both the length and technical difficulty of the techniques as being important factors in their perceived impact. In particular, pupils reported a distinct preference for mindfulness practices that require less effort and time to conduct. However, the findings may also reflect particular benefits related to pupils' use of breathing-focussed meditations compared to the alternative practices taught on the course.

These findings serve to reconfirm the difficulty inherent in transferring techniques used in clinic-based adult mindfulness programmes into a format that is both applicable and effective for school-aged children (Burke, 2010). It may be helpful for future research to compare the effects of different mindfulness techniques to ensure that the most appropriate practices are incorporated into school-based mindfulness interventions.

5.7. Variability in Pupils' Perceptions

Analysis of both quantitative and qualitative data demonstrated considerable variation in pupils' perceptions regarding the impacts of learning mindfulness in school.

A significant difference was found in the perceived helpfulness of mindfulness techniques across the 7 psychological and functional variables identified in the online questionnaire. In addition, the observed inconsistency between pupils' responses, as measured by Kendall's coefficient, suggests considerable variability in pupils' perceptions of the impact of mindfulness-based practices on each of the variables. Similarly, the results of qualitative analysis identified distinct variations in pupils' perceptions regarding the impacts of mindfulness-based practices and the situations in which they are most useful.

Such variation in pupils' perceptions arguably supports previous claims that teaching mindfulness to pupils might have diverse and varied effects on a number of outcome measures (Schonert Reichl & Lawlor, 2010). However, the disparity in pupils' perceptions may also help to explain the limited effects sizes associated with such intervention when measuring predetermined outcome variables across a population (Schonert-Reichl & Lawlor, 2010; Huppert & Johnson, 2010; Broderick & Metz, 2009).

These results may be a product of pupils' perceptions of mindfulness practices as specific coping strategies. It is plausible that such variability in pupils' perceptions is at least partially influenced by the diverse volume and nature of the personal issues pupils' face at any one time. However, such a hypothesis may prove difficult to investigate prospectively as it would require the unethical induction of stress in pupils in order to assess their subsequent utilisation of mindfulness based practices and the impacts they may exert. An alternative method may be to explore the impact of such practices during a time of naturally occurring stress (e.g. during exam periods or transition phases in school).

The variation across pupils' responses may also shed light on the existing difficulties in achieving theoretical consensus regarding the mechanisms of mindfulness. It can be suggested that the large variety of potential impacts make it difficult to contain or identify all associated factors in one workable model.

5.8. Relaxation and Calm

Previous analysis of empirical literature has highlighted relaxation as an associated outcome of mindfulness training (Greeson, 2008). Consistent with this claim, analysis of both quantitative and qualitative datasets revealed that a number of pupils perceived that their application of mindfulness-based practices induced a sense of relaxation and calm.

Further statistical comparisons of questionnaire data found pupils' ratings for this factor to be significantly more favourable than for all others investigated. Similarly, the theme 'Relaxation and Calm' emerging from Thematic analysis reflected the most dominant viewpoint within the qualitative dataset.

The prevalence of this factor within both quantitative and qualitative datasets suggests that this associated outcome may be of particular relevance for school pupils and may be a key outcome of pupils' application of mindfulness-based practices.

More research in this area would be helpful to assess the generalisability of these findings and to identify the particular mechanisms underpinning any link between mindfulness practices and a relaxation response (e.g. physical response). Future studies may also benefit from establishing if any positive behavioural changes occur as a consequence of induced relaxation.

A further theme to emerge from an analysis of qualitative data was that of 'Group Calm'. This theme reflects the opinion of some interviewees that the application of the mindfulness techniques in the classroom brought about a sense of calmness within the class group. However, this was not a widespread opinion and, in contrast, a number of pupils reported that the presence of their peers whilst carrying out mindfulness techniques served to increase their self-consciousness and made them less effective. Such findings serve to reinforce the importance of peer relationships during adolescence (Erikson, 1968) and suggest that more research is needed to further investigate the impact of mindfulness training on class dynamics. Further research may also serve to identify the presence of any objective benefits associated with such proposed calmness in a class group.

5.9. Control

Analysis of qualitative data revealed a consistent perception amongst pupils that the application of mindfulness techniques offered them increased control in relation to a three key psychological processes. The three processes identified; 'Cognitive control', 'Emotional control' and 'Attentional control' are consistent with the proposed mechanisms of mindfulness highlighted in prior theoretical literature (Cresswell, Brown and Ryan, 2007).

5.10. Cognitive Control

Consistent with prior theoretical assumptions (Baer, 2003), participants in all three focus groups and all eight interviewees reported increased control over their cognitive processing of information as a result of learning mindfulness-based practices. In particular, a number of interviewees reported experiencing less rumination and excessive worry over issues such as upcoming exams and tests that would previously have impacted on their functioning and prevented them from sleeping.

These findings are consistent with prior claims that even brief mindfulness training can reduce the use of rumination as a coping strategy (Kumer, Feldman & Hayes, 2008; Jain et al., 2007). Although not directly comparable, they also offer some support to the suggestion of a negative correlation between self-reported levels of mindfulness and rumination (Brown & Ryan, 2003).

Tentative support was also found for the claims of Kabat-Zinn (1984) that mindfulness training produces a reduction in the frequency of intrusive thoughts. A small number of pupils reported having fewer intrusive thoughts related to examination concerns as a consequence of their use of mindfulness-based practices. Increased levels of rumination and intrusive thoughts have been associated with a range of mental health disorders, including depression (Noel-Hoeksema, 2000), Obsessive Compulsive Disorder (OCD) and Generalised Anxiety Disorder (Wegner, Schneider, Carter and White, 1987). Consequently, the findings of the present research imply cautious support for claims that learning mindfulness may help to prevent some pupils developing mental health problems (Wisner et al, 2010). Likewise mindfulness interventions may also be effective for pupils already displaying indications of such difficulties.

Furthermore, in light of the growing concern over the anxiety the British pupils suffer from in relation to examinations and tests (McDonald, 2001), the current results suggest that for some pupils, mindfulness training may be an effective strategy in controlling and managing such concerns. However, due to the speculative nature of these claims, further research is needed to assess their validity and to identify the strength and extent of any such associations.

5.11. Emotional Control

Thematic analysis of both interview and focus group data revealed that a number of participants considered that the application of mindfulness-based practices enabled them to control emotions such as frustration and anger in a more positive way. This perspective was particularly prevalent in pupils' discussions relating to how they dealt with interpersonal disputes. These findings offer tentative support for prior claims that mindfulness training can positively influence the way individuals respond to negative emotions (Farb et al., 2010). However, this perception was not so prevalent within questionnaire data, which found that the majority of pupils perceived mindfulness-based practices to be either 'Slightly' or 'Moderately' helpful for dealing with their emotions.

Previous literature has suggested that the proposed link between mindfulness and emotional control is partly due to the perception of the transitory nature of emotions (Brown et al., 2007). In cautious support of this view, analysis of one focus group and one interview transcript revealed that pupils considered that studying mindfulness had given them an insight into the nature and causes of their emotions, which in turn gave them enhanced control over their impact.

Similarly, the ability to perceive emotions is proposed by Mayer et al. (2000) to be a fundamental building block of children's social and emotional competence. Hence, these findings also offer partial support for claims that mindfulness interventions in school may help promote pupils' social and emotional development (Hughes, 2011).

Further comparisons made between pupils' questionnaire responses identified that girls perceived mindfulness practice to be more helpful in managing their emotions than boys. It is plausible that this may be influenced by pre-existing differences in the ways boys and girls process emotions.

To illustrate this point, previous research by Green et al. (2005) found girls to have higher rates of internalised emotional disorder than boys who in turn show more externalised conduct based problems. If such findings can be considered to reflect genuine differences in the ways girls and boys process emotions it can be suggested that mindfulness techniques are more influential for pupils with a higher propensity to internalise rather externalise their emotions. However, such assertions are highly debateable and further research would be required to assess the strength of such an association.

Further comparative analysis revealed that pupils completing the course in the Spring term perceived the techniques to be more helpful to managing their emotions than those completing the course in the Summer term. Although further longitudinal research is needed to explore such findings, this may reflect the fact that pupils completing the course in the Spring term completed the 'b' course first and they had more time to implement the techniques they had learned in their lives to help them deal with their emotions. As such, the impact of the curriculum may develop and increase over time.

5.12. Attentional Control

Attentional control has taken a prominent position in the theoretical literature regarding mindfulness and its potentially salutary effects (Brown et al., 2007). In addition, research carried out with primary aged pupils has proposed that there are distinct attentional benefits associated with school-based mindfulness interventions (Napoli et al., 2005; Flook et al., 2010; Brown & Biegel, 2011). Further research with secondary aged pupils has also reported some improvements in pupils' attentional skills based predominantly on teacher report ratings (Schonert-Reichl & Lawlor, 2010).

The results of the present study offer further tentative support to the proposition that mindfulness-based practices can enhance the attentional skills of secondary aged pupils. Analysis of questionnaire data revealed that most pupils reported the mindfulness techniques they had learnt to be either 'Moderately' or 'Very' helpful in focussing their attention and concentrating. Additionally, 'Attention and Concentration' was a prevalent theme to emerge from analysis of the qualitative datasets.

A number of pupils mentioned that their application of mindfulness techniques enabled them to focus their attention more productively, particularly in relation to their schoolwork. This finding is consistent with the claims of Jha et al. (2007) who proposed that, during the early stages of mindfulness practice, individuals develop their ability to focus their attention on specific stimuli. Furthermore, a small number of pupils also mentioned that use of mindfulness techniques helped them to sustain their attention and to be less distracted by both particular stimuli (e.g. noise).

In combination, these findings imply that mindfulness-based practices may be helpful for some pupils in developing their attentional capabilities. This supports the potential applicability of such techniques to help pupils with specific attentional difficulties (e.g. ADHD) in secondary schools. However, further research is needed to establish the validity of these claims.

5.13. Perspective

The theme 'Perspective' was generated from analysis of qualitative data to make reference to the perception held by some pupils that learning mindfulness had changed their outlook on life in some way.

Consistent with theoretical descriptions of mindfulness (Baer et al., 2004), several pupils noted that studying mindfulness had made them more conscious of their present circumstances. Furthermore, these pupils felt such a change had led them develop a greater appreciation for their life and their environment. Such a perspective accords with additional theoretical descriptions of mindfulness which suggest that the cultivation of mindfulness leads one to develop a clarity of awareness and openness to one's present experiences (Brown & Ryan, 2003). In spite of these findings, due to the methodology employed in this study, no direct correlation can be drawn between the perceived impacts of pupils' study of mindfulness and their experience of mindfulness per se. Further developments in the conceptualisation and measurement of mindfulness may allow a better understanding of how such practices and subsequent changes in mindfulness as a discrete mental phenomenon may lead to a change in one's perspective on life.

5.14. Self -Transformation

An additional theme to emerge from the analysis of qualitative data was that of 'Self-Transformation'. This theme refers to the perception held by a number of interviewees and pupils within focus group discussions, that learning mindfulness has in some way altered the way they view themselves. This perception was not so prevalent within pupils' questionnaire responses.

Pupils who perceived such an impact noted that they felt more confident in their ability to overcome a range of stressors and some particularly noted being more motivated to approach challenges and not to shy away from difficulties.

Although not analogous, these findings are consistent with proposals that the cultivation of mindfulness is associated with increased self-esteem (Brown & Ryan, 2003). Arguably, they also provide tentative evidence to suggest that teaching mindfulness in schools may be effective in enabling some pupils to develop 'Learning power', enabling them to feel more confident in meeting the unpredictable challenges inherent within school and society (Claxton, 2002).

Further analysis of the qualitative data also revealed that a number of pupils perceived that their use of mindfulness techniques had helped them to regulate their behaviour more positively, particularly during interpersonal disputes. For these individuals such changes were attributed in part to an enhanced perception of their own mental states.

Such findings are again somewhat consistent with prior claims that the cultivation of mindfulness enables individuals to perceive their habitual patterns of thought and emotional responses leading to an increase in behavioural repertoire (Brown et al., 2007). Such perceived changes also bear resemblance to the concept of 'self-regulation' and the notion of 'perceiving emotions' believed to underpin healthy social and emotional development (Goleman, 2000; Mayer et al., 2000). Hence, the findings arguably support claims that teaching mindfulness in secondary schools may be an effective tool for developing pupils' social and emotional competence. It may also be seen as a positive addition to schools' resources under the government SEAL initiative (DCSF, 2000). These results may also have particular implications for pupils with specific social communication difficulties (e.g. Autism Spectrum Disorder; ASD) for whom such intervention may be particularly beneficial.

Further research is necessary to substantiate such claims and to explore the social and emotional benefits of mindfulness interventions in schools. In addition, it will be of interest to assess whether the perceived changes in self-regulation identified in this study translate into behavioural changes within the classroom.

Comparative analysis of questionnaire data also found that girls perceived mindfulness practice to be more beneficial to their self-perception than boys. It is possible that such differences reflect baseline pre-existing gender differences related to the way that boys and girls self-concept develops during adolescence (Garnefski et al., 2001). Further research is needed to investigate this potential trend and to investigate the potential influence of gender specific factors that may lead to such differential impacts.

5.15. Functioning

Analysis of qualitative data revealed pupils' perceptions of numerous functional impacts associated with their application of mindfulness-based practices. As discussed below, pupils noted a range of beneficial impacts in relation to their sporting and acting performances, their interpersonal relationships and their sleep patterns.

5.16. Sport and Acting Performance

As may be expected due to the differences in pupils' engagement in mindfulness-based practices, an analysis of questionnaire data revealed distinct variations between pupils' perceptions of how helpfulness mindfulness techniques are for their sporting and acting performances. Some reported positive effects whilst others felt there were none.

Pupils who did perceive such impacts noted that their application of mindfulness techniques allowed them to remain relaxed and calm and to better control their anxiety and nerves regarding their performance. As these findings refer to pupils' subjective opinions, it remains to be seen whether such perceived impacts also translate into observed improvements in pupils' performances.

5.17. Interpersonal relationships

A further perceived impact of studying mindfulness noted by pupils was that of improved interpersonal relationships. A number of pupils, particularly from school B (state educated), described how their application of mindfulness techniques had helped to calm them down during disputes with family members and to enable them to be more empathetic and considerate towards the other person(s) involved. However, a lack of consensus was found concerning participants' perspective on this point and a number of pupils (n=14, 30.4%) reported that the mindfulness techniques they had learnt had no impact at all on their interpersonal relationships. Such findings suggest distinct variability in how influential mindfulness practices may be in promoting pupils social and emotional competence and interpersonal skills. Analysis of questionnaire data found that the perceptions of pupils from school B in relation to such impact were found to be statistically more favourable than those reported from pupils' from school A (Privately educated). In addition, ratings were also higher from pupils completing the ' . b' course in the Spring term rather than Summer term.

As pupils in school B were younger than pupils' in school A, it is conceivable that such school-based differences are a reflection of pupils' developmental maturity. It may be that younger pupils have less developed social skills in comparison to older pupils and hence have more need for the mindfulness skills taught as part of the ' . b' course. Further research is needed to investigate the validity of such claims and to identify the contextual and personal factors that may underpin such observed differences in pupils' perceptions.

5.18. Sleep

Another area perceived to be affected by the application of mindfulness techniques was sleep. A number of interviewees and pupils in all three focus groups described how their use of certain mindfulness techniques had helped them to relax and to reduced their experience of certain cognitive processes (e.g. rumination and intrusive thoughts) that prevent them from sleeping. Such impact was reportedly most prominent during times of stress and worry, particularly regarding issues such as exams.

Such findings arguably highlight an important effect of mindfulness training, namely that it may help pupils to get an appropriate amount of rest in order to function effectively in school. However, more research is required to test the legitimacy of these assertions and to identify the occurrence of any associated outcomes that may follow such perceived improvements in pupils' sleep patterns (e.g. improved school performance).

5.19. Academic Functioning

As a school-based initiative, it is perhaps implicitly hoped that the study of mindfulness will lead to positive outcomes for pupils in relation to their academic functioning (Wisner et al., 2010). However, the findings of the present research offer only speculative evidence of such an effect.

A number of interviewees and pupils taking part in focus group discussions reported that the application of mindfulness techniques is helpful for their completion of academic tasks. However, analysis of pupils' responses to the online questionnaire demonstrated a great deal of variability in pupils' perceptions regarding this issue.

Pupils that did notice an impact, reported being more effective in both class based tasks and their homework. In particular, pupils reported experiencing less anxiety regarding the completion of academic assessments and tests. In addition, some pupils also noted having more intrinsic motivation towards their work and felt that their study of mindfulness had led them to perceive the benefits of learning for learning's sake, rather than purely learning for the sake of taking tests.

Such findings offer support to claims that positive psychological interventions such as mindfulness training may have broad benefits for pupils' academic achievement (Seligman, 2000). They may also go some way to answering calls for school curricula to move away from the predominant emphasis on content and evaluation and to develop pupils' learning abilities so that such capacity for learning can be used in a variety of situations (Claxton, 2008). Similarly, the findings also suggest that such interventions may also be beneficial in tackling the prevailing issue in British schools of pupil stress and anxiety regarding exams and public examinations (McDonald, 2001).

These results advocate the need for further research to ascertain whether such perceptions of improved academic functioning convert into improvements in observable learning outcomes. Similarly, more work is needed to identify which pupils such interventions are best suited to. It may be that such a course is well placed to help pupils either prior to or during exam periods, to reduce stress and anxiety.

Comparative analysis of group responses revealed that girls provided significantly more favourable ratings than boys with regards to how helpful mindfulness was with their schoolwork. This finding is perhaps unexpected in light of previous research suggesting that gender differences in the use of coping strategies are less apparent in an academic context (Eschenbeck, Kohlmann and Lohaus, 2007). Such results highlight the need for further research into the different way that boys and girls may use mindfulness techniques in relation to their schoolwork.

Similarly, findings also revealed more favourable ratings by pupils completing the ‘. b’ course in the Spring term compared to the Summer Term. These findings may merely reflect the fact that pupils completing the course in the Spring term would have had more opportunities to apply the techniques they learnt than those completing the course more recently in the Summer term. However, more research is needed to assess such claims and to identify the longitudinal effects of mindfulness training in regard to academic functioning and associated outcomes.

5.20. Pupils’ perceived barriers to engaging in mindfulness practice.

As noted by Huppert and Johnson (2010), a pupil’s personal level of engagement in mindfulness practice may be particularly influenced by his/her life experience. As a result, the findings of the current study include a detailed investigation of pupils’ perceptions of the barriers they face in their practice of mindfulness. The breadth of issues discussed by pupils serves to illustrate the wide range of personal, environmental and practical factors they considered to be important.

5.21. Course Length

Analysis of qualitative data revealed that a number of pupils perceived that the ‘. b’ curriculum was not long enough for them to feel confident in practicing mindfulness on their own. These pupils were not confident in their ability to carry out some of the techniques they had learnt and felt that they required longer-term guidance and support to develop their personal practice of mindfulness.

This issue is arguably difficult to resolve due to the uniqueness of the school setting as an environment to carry out mindfulness intervention (Best and Kahn, 2005). There is arguably inherent difficulty in providing a mindfulness curriculum that is suitable and effective for pupils, both in terms of duration and content and is applicable within the established national curriculum and individual school structures.

Given that there is no consensus among pupils as to the existence and/or nature of any impact resulting from such intervention, it may be considered inappropriate for reasons of time and cost, for schools to employ such initiatives or for their delivery to be extended. However, it can also be argued that if intervention effects are enhanced via additional support and guidance then such additions to the current format may be valuable. Further research is required to establish the optimum length and delivery of such intervention in order to maximise positive impact for pupils whilst maintaining a full and varied curriculum.

5.22. Lack of Impact

A further issue raised by some pupils was that some of the techniques that they learnt as part of the ‘. b’ curriculum had limited impact for them. Such issues are perhaps to be expected following the adaptation of adult mindfulness techniques into a child friendly format (Burke, 2010). However, it is difficult to identify whether such perceived lack of impact is related to pupils’ personal application of techniques or whether they reflect issues relating to the appropriateness of such practices with school aged pupils generally.

Further research is needed to establish a better understanding of which techniques are most effective for school aged pupils and to understand the specific components associated with the success of techniques.

5.23. Forgetfulness / Other Priorities

Analysis of both focus group and interview data revealed that a number of pupils considered that a key barrier to their engagement in mindfulness-based practices was their personal forgetfulness and their perception that they had more important priorities in their life. As noted previously, adolescence can be seen as a time of rapid social and emotional change that places increasing demands on an individual's cognitive and physical resources (Dahl & Gunner, 2009). Furthermore, this stage of development has also been associated with deficits in executive functioning and an inability to plan and organise efficiently (Browning et al., 2010). In light of such considerations, it is perhaps not surprising that some pupils reported difficulty in establishing a regular routine for the practice of mindfulness techniques. Equally, pupils predominantly considered mindfulness to be a specific coping strategy. As such, they may be predisposed to overlook the use of mindfulness techniques if they already have a general sense of wellbeing and a perceived lack of a need for such practices in their life.

5.24. Self-Consciousness

A further barrier perceived by some pupils limiting their engagement in mindfulness practice was that of self-consciousness. Both interviewees and participants in focus group discussions reported feeling concerned about what their peers would think of them if they knew that they were practicing mindfulness.

As discussed in a previous chapter, the influence of one's peer group may be particularly strong during adolescence when an individual's self-concept is perhaps more closely tied to the values and opinions of his/her friends than his/her family (Erikson, 1968). Therefore, it may be that any social stigma attached to pupils' engagement in mindfulness practices may prevent individuals from wanting to engage in associated practices.

However, as noted previously, analysis of qualitative data identified that many pupils' experience of the 'b' course actually led them to rethink their initial scepticism regarding mindfulness. As such, it can be hypothesised that as more pupils complete mindfulness curricula in school, any social stigma associated with its practice may diminish and more pupils might be more willing to engage in practicing the techniques that they have learnt. Further research using a longitudinal design may be of benefit to assess any apparent changes in social perception regarding the course and to subsequently observe pupils' level of engagement over time.

5.25. Pupils' perceived barriers to the effectiveness of mindfulness practices.

In addition to exploring factors influencing pupils' engagement in mindfulness practice, the results of the current study also reveal a number of factors perceived by pupils to limit the effectiveness of the practices they learnt.

5.26. Technical Difficulty

Analysis of qualitative data found that the duration and technical difficulty of the mindfulness techniques pupils had learnt influenced how pupils perceived their impact.

In particular, pupils reported less impact from longer more intensive practices compared to those that were completed quickly and with minimal effort. Such findings may serve to explain pupils' general preference for the '7-11' technique, which can be easily conducted in a short period of time.

Again, these results serve to highlight the difficulty of transforming an adult-based mindfulness programme into an applicable and effective initiative for school aged children (Burke, 2010). However, it can be argued that each technique taught on the 'b' course covers a different concept related to mindfulness and excluding any of the individual practices would serve to undermine the overall impact of the course. It may be that additional time needs to be spent ensuring that pupils are confident in their ability to carry out all techniques so that they can experience a similar impact from each one.

5.27. Concentration and Attention

A number of pupils felt that their own limited ability to concentration and focus their attention was a particular barrier to the effectiveness of certain mindfulness techniques that they had learnt. Such findings echo the proposal by Jha (2005) that child-based mindfulness interventions need to carefully account for the attentional capacities of the pupils they are targeting. As stated by Crone (2009), adolescence is a period during which individuals develop their attentional skills and it may be that whilst some pupils' attentional capabilities enable them to perform certain techniques, others may not have developed sufficient attentional skills to do so effectively.

Unfortunately, this issue may create a paradoxical situation, as pupils also reported that their engagement in mindfulness practices was associated with attentional benefits. Hence it may be that the pupils most in need of such practices may be the very pupils who struggle to implement them. Future research should explore this association further and attempt to identify ways of gradually developing pupils' attentional skills to be able to access a wider variety of mindfulness practice.

5.28. Lack of Physical Activity

Analysis of Focus group 3 (School B) highlighted that, for some pupils, the lack of physical activity associated with some of the techniques was a perceived barrier to their effectiveness. These pupils reported having difficulty sitting still for prolonged periods of time and noted that they would prefer it if some of the techniques incorporated more physicality and movement.

In light of these findings, it can be suggested that mindfulness techniques requiring more self-restraint involving prolonged periods of inactivity may be less suitable for some pupils and may require additional modification to allow them to experience the potential effects that such practices may have.

5.29. Environmental Distractions

Further analysis of qualitative data revealed that a number of pupils perceived environmental factors, such as limited space and the presence of external noise, as a barrier to the effectiveness of the mindfulness practices they had learnt. These pupils reported needing an appropriate environment devoid of distractions in order to effectively carry out certain techniques. A further distraction noted by some pupils was the behaviour of their peers. It was mentioned that it was difficult to carry out the techniques in the classroom as a number of pupils were misbehaving and attempting to distract other pupils.

Again, such findings are of relevance to the delivery of mindfulness curriculums in schools. In particular, teachers may need to be aware of their class dynamics and structure the classroom accordingly to maximise the impact of the sessions. It could also be argued that, to limit such distraction, it would be more beneficial if the delivery of the course were limited to only those pupils who wanted to be on the course. However, such a distinction may also serve to distance pupils from the course and lead to an increased stigma attached to its adherence.

It may also be suggested that the sessions are most effectively taught in an environment where pupils are exposed to limited external distractions and have ample space to carry out practices. However, as many of the practices that the pupils learn are proposed to have relevance in daily life, to create an artificial environment to learn them in may be counterproductive to their targeted outcomes.

5.30. Contribution of Findings

The findings discussed in this section will be of particular interest to those individuals that are either presently delivering the MiSP ‘. b’ curriculum or considering incorporating the curriculum (or one like it) within a school. They will also be of interest to professionals such as educational psychologists who work closely with both individuals and groups of pupils which are often in need of additional support in school.

The range of issues discussed herein serve to highlight how important it is that professionals give full consideration both to the potential applicability of the curriculum to the pupils they work with and to the factors that may help to maximise its effectiveness for these pupils.

The perceptions of pupils discussed in this section can be seen as a vital component in understanding the place of mindfulness interventions in schools. The personal, social and environmental factors considered give new and important insight into how the curriculum is received first-hand by the pupils it is targeting. Such knowledge is perhaps indispensable to ensuring mindfulness-based courses are delivered to the most appropriate pupils in the most appropriate ways.

5.31. Limitations of the Current Research

In the following section, limitations of the methodological and analytic processes applied to the current research are considered with reference to the study's findings.

This study used a mixed methods research design, combining quantitative and qualitative methodologies to counteract the disadvantages associated with conducting each approach in isolation (Johnson & Onwuegbuzie, 2004). However, it can still be argued that certain limitations related with each methodology are applicable to the current study.

Condelli and Wrigley (2004) suggest that the innate subjectivity of qualitative research methods creates bias in the interpretation of data. As a result, the personal views and values of the researcher may unfairly influence the interpretation of qualitative data. To minimise this risk, the author sought to maintain objectivity and reflexivity throughout the analytic process. In addition, the epistemological and theoretical underpinnings of the research were clarified to ensure potential biases were made transparent to the reader (Braun & Clarke, 2006).

It can also be suggested that the collection of retrospective data limits the validity of the research findings. It can be argued that the time-lapse between pupils' completion of the ' . b' mindfulness curriculum and the data collection period may have distorted pupils' views. However, for the purposes of this research, this time period was considered important in order to allow pupils the opportunity to implement the skills they had learned on the ' . b' course in their lives.

The study does not seek to make definitive claims regarding the effectiveness of the 'b' course as an intervention, or assertions concerning the legitimacy of pupils' opinions. Instead it seeks to understand the diverse ways that pupils create meaning from their experiences of studying mindfulness and learning mindfulness-based practices. As such, the variability and subjectivity of pupils' responses is considered to be particularly important and valuable to the study's aims.

A further limitation affecting the data is that all participants explored the basic theoretical and empirical literature regarding mindfulness as part of the 'b' course. Hence, pupils' qualitative and quantitative responses may be a reflection of the effects that they think they should have experienced, rather than those they actually did experience. To counteract this issue, wherever possible, pupils were required to describe their experience in as much detail as possible and to relate their answers to their personal experiences.

As with previous research investigating the impact of mindfulness-based interventions in secondary schools (Huppert and Johnson, 2010; Schonert – Reichl and Lawlor, 2010), a number of limitations may exist in relation to the collection and interpretation of quantitative data within a "real world" educational setting (Best and Kahn, 2005).

The conclusions drawn from the analysis of questionnaire data are limited by the small sample size for the online questionnaire (n=46). Although attempts were made to increase the response rate through the use of an online questionnaire, the size of the resulting sample serves to considerably limit the generalisability and representativeness of the findings.

Due to time constraints regarding the study's data collection period, the online questionnaire was distributed at a time when many pupils were preparing for exams. Hence, this may have negatively impacted on their willingness to be involved in the study. Circulation of the questionnaire at a more appropriate time may have yielded a greater return.

Further limitations evident in the quantitative data collected in this study relate to the presence of a number of confounding variables that serve to complicate the comparative analysis made between pupils based on their gender, school or the time since they had completed the ' . b' curriculum (cohort).

In particular, the validity of group comparisons based exclusively on pupils' school membership is reduced by the fact that pupils in school A and school B were also of different ages and were taught by different teachers. In addition, the curriculum was also more established within school A than in school B. It is difficult therefore, to isolate the influential factors associated with each school that may underlie observed group differences.

Similarly, findings from comparative analysis based on pupils' gender is adversely affected by the fact that only school B had female pupils. Not only did this create highly imbalanced sample sizes but it also meant that any observed differences between male and female pupils may be at least partially attributable to pre-existing school based differences.

Likewise, the legitimacy of any comparisons based on when pupils completed the ' . b' course (cohort) are limited by the fact that all pupils in school B completed the course in Spring term. Hence, any group differences between the two cohorts are therefore potentially also confounded by pre-existing school based differences.

Further criticism of questionnaire data pertains to the wording of the questions used in the online questionnaire. The terms '*helped*', '*influenced*' and '*changed the way*' were used interchangeably between questions within the online questionnaire in order to capture pupils' perceptions regarding a wide variety of psychological and functional variables. However, it could be argued that individual pupils may have perceived these terms differently from one another leading them to capture distinctly different aspects of pupils' perceptions. Any comparisons made therefore between responses to individual questions may be influenced by the different interpretation of the questions. Future research employing a similar online questionnaire method should seek to employ more consistent wording.

Arguably, a fundamental limitation of the current research relates to the lack of consensus regarding the definition and conceptualisation of mindfulness as a distinct construct (Davidson, 2010). This ambiguity means that the present investigation cannot make any claims regarding the impact of mindfulness as the active component within the intervention or the practices taught within it.

Likewise, the lack of a comparison group in the study means that the results cannot be verified as being different from any other intervention or curriculum focussed on developing pupils' social and emotional wellbeing. However, as the current research is exploratory in nature, it does not seek to make generalised claims of the effectiveness of the curriculum. Nor does it seek to compare its effectiveness against that of alternative initiatives. Rather the focus of this study is to explore the diversity of pupils' experiences in order to identify pathways for future research.

CHAPTER 6: CONCLUSION

6.1. Contribution of Research and Recommendations for Future Research

The analysis of both quantitative and in-depth qualitative data obtained in this research provides a unique insight into how a group of secondary aged pupils perceived the impact of studying 'mindfulness' in school and the barriers to its successful implementation.

The results serve to complement and enhance the currently limited literature base examining the potential impacts of mindfulness-based interventions for pupils in secondary schools. Furthermore, they provide original evidence of the barriers impacting pupils' engagement in mindfulness-based practices.

However, limitations regarding the methodological and analytic processes applied in the study arguably serve to restrict the validity and generalisability of its findings. As a result, a number of recommendations are made for the direction of further research.

The main results of this study support previous claims advocating both the applicability and feasibility of delivering mindfulness-based initiatives as part of a regular secondary school curriculum (Huppert and Johnson, 2010). None of the pupils who participated in the study reported any detrimental effects from their involvement in the ' . b' mindfulness curriculum and some expressed interest in continuing their study of mindfulness subsequent to the completion of the course.

Overall, participants perceived that the practices taught to them as part of the ' . b' curriculum had only a moderate impact on them. These findings are consistent with prior research reporting modest effect sizes from the assessment of similar interventions (Schonert-Reichl and Lawlor, 2010; Huppert and Johnson, 2010; Broderick and Metz, 2009). Demonstrating further consistency with the results of previous research (Huppert and Johnson, 2010), the majority of pupils also reported infrequent personal use of the mindfulness-based practices they had learnt. However, contributing new insight into the potential reasons for such results, analysis of in-depth qualitative data highlighted a number of influential factors perceived by pupils to limit both their engagement in and impact of mindfulness practices.

With respect to pupils' limited use of techniques, it was identified that some participants felt that the ' . b' course was not long enough for them to develop the skills needed to carry out certain techniques alone. As such, these pupils felt they needed additional guidance to carry out certain techniques alone. A number of other pupils reported merely overlooking the use of the techniques in certain situations or felt they had more pressing demands of their time. A small number of pupils also reported feeling self-conscious about partaking in mindfulness practice and were concerned of what their peers would think of them.

A number of pupils noted finding shorter less effortful mindfulness techniques to be most effective. Some pupils reported difficulty concentrating on certain practices and noted their propensity to become distracted whilst carrying out techniques. Of the practices taught to the pupils the '7-11' and similar simple breathing techniques were considered to be the most helpful.

Taken in combination, these findings serve to inform both the content and delivery of mindfulness curricula in secondary schools. They are of interest both to individuals currently providing the ' . b' course and to those contemplating its inclusion within the schools they work in. The issues highlighted also suggest the need for further research to establish the most effective mindfulness practices for secondary aged pupils and to find the most appropriate method of their delivery to achieve the maximum engagement of pupils.

Further analysis of qualitative data revealed that, rather than being seen as tools for an ongoing and developing mindfulness practice, pupils perceived the techniques in terms of being specific coping strategies to help them deal with particular stressors.

As such, their low rate of personal practice may result from the low frequency or triviality of the particular problems they face at any one time, rather than any general antithesis towards mindfulness-based practices or any doubts as to their effectiveness. Similarly, although the general impact of the course does not appear to be significant when analysed across the questionnaire sample (n=46), analysis of individual and group level data revealed broad variations in both the perceived impact and reported application of the techniques that pupils had learnt.

Analysis of qualitative data generated a range of themes to describe pupils' perceptions of the impacts of studying mindfulness (Relaxation and Calm, Control, Perspective, Self-Transformation and Functioning). In addition, analysis of questionnaire data provided insight into the variable impact mindfulness practices were perceived to have on different outcomes variables.

Of the themes generated, 'Relaxation and Calm' was the most dominant to emerge from the data. Consistent with the analysis of questionnaire data, pupils considered mindfulness techniques to be particularly helpful for inducing relaxation and staying calm. Perceived to be helpful in a range of contexts (sleep, schoolwork, interpersonal relationships, acting and sport), the findings suggest that relaxation may be a key process involved in the impact of mindfulness-based techniques when practiced by school aged pupils. However, more research is needed to explore the validity of such claims and to isolate the potential mechanisms underlying such effects (e.g. physical and cognitive changes).

A second theme to emerge from analysis of qualitative data was that of 'Control'. Consistent with effects proposed in theoretical accounts of mindfulness (Cresswell, Brown and Ryan, 2007), many pupils perceived that their application of mindfulness techniques gave them better control over emotional, cognitive and attentional processes.

In relation to pupils' cognitive processing, a number of pupils reported decreased rumination and less frequent intrusive thoughts as a result of their mindfulness practice. Such changes were implicated in perceived benefits in a range of contexts, from nerves regarding sporting and acting performances to concerns over examinations.

As both rumination and intrusive thoughts have been implicated in the occurrence of mental health disorders such as depression (Noel-Hoeksema 2000), OCD and Generalised Anxiety disorder (Wegner et al., 1987), the results provide cautious support for claims that teaching mindfulness to secondary aged pupils may help prevent the development of longer-term mental health issues (Wisner et al., 2010). In addition they also suggest that mindfulness practices may be an effective method of reducing the prevalence of students' anxiety, particularly in relation to examinations (McDonald, 2001).

Further longitudinal research is required to assess the validity of such claims and to clarify the association between mindfulness techniques and certain cognitive processes. Furthermore, analysis of questionnaire data revealed that girls perceived mindfulness practice to be significantly more helpful in managing their emotions than boys. As such, more research is needed to explore how individual differences alter the manifestation of such perceived differences.

Displaying consistency with prior research in the primary sector (Napoli et al., 2005; Flook et al., 2010), a number of pupils also perceived that their application of mindfulness techniques improved their concentration and attention skills. Again these findings require further investigation to see if such perceptions translate into objective outcomes and whether such practices may be of particular benefit to pupils with attentional difficulties (e.g. ADHD).

A further theme emerging from the data was 'Perspective' reflecting some pupils' perceptions that studying mindfulness led to a positive change in their outlook on life. In particular, these pupils noted that they were more alert to their present circumstances and more aware of their environment. Although such findings bear close resemblance to theoretical accounts of mindfulness (Baer et al., 2004), further development to the conceptualisation and measurement of mindfulness as a distinct psychological construct is needed to explore whether such changes are a result of increased levels of mindfulness. In addition, comparative research is needed to establish whether such perceived changes are specific to mindfulness-based interventions.

Reflected in the theme 'Self transformation', a number of pupils also perceived that their study of mindfulness had changed certain aspects of their own character and/or behaviour. Again, consistent with theoretical accounts of mindfulness (Brown et al., 2007), such changes included being more perceptive of their own mental states and habitual thought processes and showing more ability to regulate their behaviour showing consideration and empathy towards others.

Such perceived changes in self-awareness and self-regulation also provide tentative support for claims that studying mindfulness may enhance pupils' social and emotional competence and could be a useful tool under the SEAL initiative (Hughes, 2011). Further research is needed to assess whether pupils' perception of such change translates into observable behavioural outcomes. In addition, it may be relevant to examine the impact of such intervention with pupils experiencing requiring particular difficulties in relation to their social and emotional development.

Exploration of the final theme to emerge from analysis of qualitative data (Functioning) provides new insight into how individual pupils utilise the mindfulness techniques they learnt as part of the ' . b' curriculum. In particular, many pupils note that mindfulness helped them with academic functioning, especially homework, tests and exams. Some of these pupils also noted having a different attitude to their work and being more intrinsically motivated to succeed. As such, the findings suggest that studying mindfulness may be effective in raising the academic standards and learning skills of certain pupils. However, these claims require further research to explore their legitimacy and to again investigate whether such perceived changes translate into objective behavioural changes.

Other functional abilities noted to be positively impacted by the study of mindfulness related to pupils' sleep, interpersonal skills, sporting and acting performances. This wide variety of applications suggests that mindfulness practice impacts pupils in a highly personal manner. Additional research into each of these areas would be beneficial in order to establish the strength of such associations and to identify the personal characteristic of pupils who benefit in each regard.

6.2. Practical Implications for Education and the Practice of Educational Psychologists.

The conclusions derived from this research have implications for a range of professionals seeking to promote the social, emotional and academic competence of secondary aged pupils. In particular, the findings provide broad ranging evidence to help individuals and establishments consider the potential inclusion of mindfulness initiatives within the general school curriculum. Furthermore, the study highlights a range of possibilities for future research studies in order to provide further clarity on the impacts of such initiatives.

Due to their knowledge of psychological principles and developmental theory, EP's arguably have a unique role to play in the interpretation and subsequent dissemination of such data to schools.

Through their regular contact with schools, EPs can help staff understand and make use of these findings and help them make informed choices as to the appropriateness of including such interventions within their school. Similarly, they can also support schools already implementing such interventions and evaluate their effectiveness and assist in their subsequent development.

In light of pupils' perceptions of the broad ranging impacts and applications of the practices taught in the ' . b' curriculum , it can be suggested that they may also be applicable for the individual and group level therapeutic work of EPs. In particular, they may be beneficial for pupils struggling with a range of social and emotional, attentional and academic issues.

One limitation is that individuals currently wishing to deliver the ' . b' curriculum are required to have completed a minimum of 8-weeks mindfulness training and subsequent training from the MiSP programme team. However, such preparation may be seen as both personally and professionally beneficial and may be incorporated as part of an individual's continued professional development.

The findings of this research serve to illustrate and highlight the potential for such practices within the field of education. Although there are many restrictions on the claims that can be made from this study alone, it arguably paves the way for a wealth of future research that may provide further clarity regarding the place of mindfulness curricula within secondary schools.

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APPENDIX A
School of Psychology Cardiff University

Gatekeeper consent

I understand that my consent for this project will involve the participation of pupils who have completed the .b mindfulness curriculum in XXX School.

Students will be asked to complete a short semi-structured online questionnaire regarding their experiences of mindfulness and the personal impact of the curriculum for them. This process should take no longer than 30 minutes to complete.

In addition, a group of 6 – 8 pupils will be involved in a focus group discussion, which will explore their experiences in more depth. These discussions will be recorded via Dictaphone and should take no longer than 1 hour.

Finally, a maximum of 6 pupils will be involved in an individual interview again exploring pupil experience in more detail. These interviews will be recorded via Dictaphone and should take no longer than 1 hour to complete.

The information provided by participants will be kept confidentially. Questionnaire data will be anonymous so that it is impossible to trace this information back to them individually and all recorded data will be destroyed immediately after transcription and made anonymous so that it is impossible to trace information back to pupils individually.

I understand that pupils' participation in this study is entirely voluntary and they can withdraw from the study at any time without giving a reason. Pupils can also withdraw their data from the study at any point up until it has been made anonymous, when it will no longer be possible to trace data back to individual pupils.

I understand that I am free to ask any questions at any time. I am also free to withdraw pupils from participation in this study and discuss my concerns with the supervising member of staff (Dr Jean Parry, Professional Tutor DEdPsy Cardiff).

I also understand that at the end of the study participants will be provided with additional information and feedback about the purpose of the study.

I, _____(NAME) consent my pupils to participate in the study conducted by Robert Kempson School of Psychology, Cardiff University with the supervision of Dr Jean Parry, School of Psychology, Cardiff University.

Signed:

Date:

APPENDIX B
School of Psychology Cardiff University

Contact Details provided with ALL consent and Debriefing Forms

Name of researcher	Name of Supervisor
Robert Kempson Postgraduate (DEdPsy Cardiff)	Dr Jean Parry (Professional Tutor & CPD director (DEdPsy Cardiff)
School of Psychology Cardiff University Tower Building Park Place Cardiff CF10 3AT Tel: 029 2087 4007*	School of Psychology Cardiff University Tower Building Park Place Cardiff CF10 3AT Tel: +44(0)29 20879003
Email: kempsonr@cardiff.ac.uk	Email: ParryJI@Cardiff.ac.uk

For complaints please contact:

Psychology Ethics Committee secretary

Email: psychethics@cf.ac.uk

Phone: +44 (0)29 208 74007

Fax: +44 (0)29 2087 4858

Address:

Psychology Ethics Committee Secretary

Cardiff University

Tower Building

Park Place

Cardiff

CF10 3AT

APPENDIX C

School of Psychology Cardiff University

Parental Assumed Consent Letter (Questionnaire)

Dear Parent

I am writing to inform you that your child's class is due to be involved in an external research project carried out by a doctoral student at Cardiff University.

Your child's involvement in this research will involve them completing a short semi structured online questionnaire following their participation in the .b mindfulness curriculum delivered in school.

The questionnaire will explore your child's experiences of mindfulness and the personal impact of the curriculum for them. This process should take no longer than 30 minutes to complete.

Their participation in this study is entirely voluntary and they can withdraw from the study at any time without giving a reason.

As a parent you will be free to ask questions of the research at any time and to withdraw your child from the research at any time. You will be able to discuss any issues or concerns with the researcher himself or his supervising member of staff (Dr Jean Parry, Professional Tutor DEdPsy Cardiff).

The information provided by your child will be anonymous so that it is impossible to trace this information back to them individually.

Following completion of the study, pupils will be provided with additional information and feedback about the purpose of the study.

If you wish for your child not to take part in this research then please complete and return this form via email by June 20th 2011 and their involvement will not be requested.

I, _____(NAME) do not wish my child to participate in the study conducted by Robert Kempson School of Psychology, Cardiff University with the supervision of Dr Jean Parry, School of Psychology, Cardiff University.

Date:

APPENDIX D
School of Psychology Cardiff University
Pupil Online Questionnaire Consent Form

I understand that my participation in this study will involve me completing a short semi structured questionnaire concerning my experience of mindfulness and the personal impact of the Mindfulness course I completed in school.

This process should take no longer than 30minutes of my time.

I understand that participation in this study is entirely voluntary and that I can withdraw from the study at any time without giving a reason.

I also understand that my data will be anonymous so it is impossible to trace this information back to me individually. I am also free to discuss any concerns I may have with the university Thesis supervisor Dr Jean Parry (Professional Tutor DEdPsy, Cardiff).

I also understand that at the end of the study I will be provided with additional information and feedback about the purpose of the study.

I have fully read and understood the above statements and consent to participate in the study conducted by; Robert Kempson (School of Psychology, Cardiff University) under the supervision of Dr Jean Parry (Professional Tutor DEdPsy, Cardiff).

Please tick box

YES

NO

APPENDIX E
School of Psychology Cardiff University

Debriefing Form

Mindfulness in schools: A mixed methods investigation of how secondary school pupils perceive the impact of studying mindfulness in school and the barriers to its successful implementation

Dear Participant

Thank you for taking part in this study.

The study aims to look at how school pupils experience mindfulness and how it impacts on their life.

Secondly, the research aims to assess the effects of the .b curriculum by asking pupils themselves what they think are its benefits and limitations. The study uses semi structured questionnaire data, focus group data and in-depth interview data to explore pupils' experience and perceptions of mindfulness and the personal impact of the .b mindfulness curriculum. The data collected will be transcribed and analysed to discover central themes.

All data will be held confidentially and will be made anonymous at the first possible opportunity so that it is impossible to trace this information back to you individually.

If you have any further questions or concerns regarding the study please do not hesitate to contact either myself or my university supervisor (Dr Jean Parry, Professional Tutor DEdPsy Cardiff) directly.

APPENDIX F
School of Psychology Cardiff University
Online-Questionnaire

Thank you for taking part in this study.

Please answer each question honestly and in as much detail as possible.

Participant Information

Date

School Name.....

Age.....

Gender.....

Course Date

SPRING TERM (Jan-April)

SUMMER TERM (May-July)

*Please read the following questions carefully and **tick** the **box** next to the statement that most accurately reflects your response.*

• **Question 1.**

Overall, how **HELPFUL** do you find mindfulness practice in your life?

Extremely helpful

Very helpful

Moderately helpful

Slightly helpful

Not helpful at all

• **Question 2.**

How often do you practise any of the mindfulness techniques that you have learnt?

Every Day

Regularly more than once a week

Regularly, but less than once a week

Rarely, but when I want to

Never

Below each of the following questions is a space to explain your answer in more detail.

- **Question 3.**

Which of the mindfulness techniques you have learnt do you find MOST HELPFUL?

7 -11

Mindful breathing

Noticing your stress signature

Beditation

FOFBOC (seated body-scan)

Listening to thoughts as sound

Mindful eating

Counting breaths in one minute

Seeing thoughts as clouds

Please briefly explain how you use this technique in your life?

- **Question 4.**

How **HELPFUL** do you find mindfulness practice in helping you to stay focused, pay attention & concentrate?

Extremely helpful

Very helpful

Moderately helpful

Slightly helpful

Not helpful at all

Please briefly explain your answer in more detail below thinking about the impact of mindfulness practice on your THOUGHTS, FEELINGS and BEHAVIOUR.

- **Question 5.**

How **HELPFUL** do you find mindfulness practice in dealing with stress & worry?

Extremely useful

Very useful

Moderately useful

Slightly useful

Not useful at all

Please briefly explain your answer in more detail below thinking about the impact of mindfulness practice on your THOUGHTS, FEELINGS and BEHAVIOUR.

- **Question 6.**

How **HELPFUL** do you find mindfulness practice for relaxation and staying calm?

Extremely helpful

Very helpful

Moderately helpful

Slightly helpful

Not helpful at all

Please briefly explain your answer in more detail below thinking about the impact of mindfulness practice on your THOUGHTS, FEELINGS and BEHAVIOUR.

- **Question 7**

How **HELPFUL** do you find mindfulness practice in managing your emotions?

- Extremely helpful
- Very helpful
- Moderately helpful
- Slightly helpful
- Not helpful at all

Please briefly explain your answer in more detail below thinking about the impact of mindfulness practice on your THOUGHTS, FEELINGS and BEHAVIOUR.

- **Question 8**

How much has your experience of mindfulness practice changed the way you feel about yourself and your view of the world?

- Extremely
- Very much so
- Moderately
- Slightly
- Not at all

Please briefly explain your answer in more detail below thinking about the impact of mindfulness practice on your THOUGHTS, FEELINGS and BEHAVIOUR.

- **Question 9.**

How much has your experience of mindfulness practice influenced your relationships with other people (friends, family, teachers)?

- Extremely
- Very much so
- Moderately
- Slightly
- Not at all

Please briefly explain your answer in more detail below thinking about the impact of mindfulness practice on your THOUGHTS, FEELINGS and BEHAVIOUR.

- **Question 10**

How **HELPFUL** have you found mindfulness practice with your schoolwork?

- Extremely helpful
- Very helpful
- Moderately helpful
- Slightly helpful
- Not helpful at all

Please briefly explain your answer in more detail below thinking about the impact of mindfulness practice on your THOUGHTS, FEELINGS and BEHAVIOUR.

- **Question 11**

How **HELPFUL** have you found mindfulness practice in your performance in other disciplines **e.g. sport, music, art**?

Extremely helpful

Very helpful

Moderately helpful

Slightly helpful

Not helpful at all

Please briefly explain your answer in more detail below thinking about the impact of mindfulness practice on your **THOUGHTS, FEELINGS** and **BEHAVIOUR**.

- **Question 12**

Are there any others areas of your life that mindfulness has been useful? If so how?

- **Question 13**

What stops you practising mindfulness more regularly?

Thank you for your participation in this study.

If you have any questions regarding this research please contact one of the following:

Name of researcher	Name of Supervisor
Robert Kempson Postgraduate (DEdPsy Cardiff)	Dr Jean Parry (Professional Tutor & CPD director (DEdPsy Cardiff)
School of Psychology Cardiff University Tower Building Park Place Cardiff CF10 3AT Tel: 029 2087 4007*	School of Psychology Cardiff University Tower Building Park Place Cardiff CF10 3AT Tel: +44(0)29 20879003
Email: kempsonr@cardiff.ac.uk	Email: ParryJI@Cardiff.ac.uk

For complaints please contact:

Psychology Ethics Committee secretary

Email: psychethics@cf.ac.uk

Phone: +44 (0)29 208 74007

Fax: +44 (0)29 2087 4858

Address:

Psychology Ethics Committee Secretary

Cardiff University

Tower Building

Park Place

Cardiff

CF10 3AT

APPENDIX G

School of Psychology Cardiff University

Parental Consent Form for Focus Group

I understand that my consent for my child's involvement in this research will involve their participation in a short focus group discussion including up to 7 other pupils from their school year. This discussion will take place following their completion of the .b mindfulness curriculum delivered in school. The group will explore their experiences of mindfulness and the personal impact of the mindfulness curriculum for them. This process will be recorded via Dictaphone and should take no longer than 1 hour to complete.

I understand that my child's participation in this study is entirely voluntary and that he / she can withdraw from the study at any time without giving a reason.

I understand that the information provided by my child will be stored confidentially and will be destroyed immediately after transcription. Following transcription, data will be made anonymous so that it is impossible to trace it back to an individual pupil. I also understand that either my child or myself is able to withdraw their data from the study at any point until data has been made anonymous when it will no longer be possible to trace data back to pupils individually.

I understand that I am free to ask any questions at any time. I am also free to withdraw my child from participation in this study and discuss my concerns with the supervising member of staff (Dr Jean Parry, Professional Tutor DEdPsy Cardiff).

I also understand that at the end of the study, participants will be provided with additional information and feedback about the purpose of the study.

I, _____(NAME) consent my staff to participate in the study conducted by Robert Kempson School of Psychology, Cardiff University with the supervision of Dr Jean Parry, School of Psychology, Cardiff University.

Signed:

Date:

APPENDIX H
School of Psychology Cardiff University

Pupil Focus Group Consent Form

I understand that my participation in this study will require my involvement as part of a small group discussion concerning my experience of mindfulness and the personal impact of the Mindfulness course I completed in school. This process should take no longer than 1 hour of my time.

I understand that participation in this study is entirely voluntary and that I can withdraw from the study at any time without giving a reason. I understand that the discussion will be recorded via Dictaphone and that this data will be kept confidentially and destroyed immediately following transcription. I also understand that immediately following transcription my data will be made anonymous in order that it is impossible to trace this information back to me individually. I understand that I can withdraw my data up to the point of being made anonymous when it will no longer be possible to trace individual data.

I am also free to discuss any concerns I may have with the university Thesis supervisor Dr Jean Parry (Professional Tutor DEdPsy, Cardiff).

I also understand that at the end of the study I will be provided with additional information and feedback about the purpose of the study.

I, _____ (NAME) consent to participate in the study conducted by Robert Kempson (School of Psychology, Cardiff University) under the supervision of Dr Jean Parry (Professional Tutor DEdPsy, Cardiff).

Date:

APPENDIX I

School of Psychology Cardiff University

Focus Group Questioning Route

Welcome pupils and thank for their participation. Offer sweets and drink.

Briefly explain what the study is about and that the focus group is an **informal discussion** regarding pupils experience of mindfulness. **There is no right or wrong response and it is important that they are as honest as possible.**

Establish Ground Rules

1. One person speaks at any one time

2. Respect the person speaking – “Everyone’s experience is different and it’s important that we allow everyone to have his or her say. If you have had a different experience then that’s fine just wait your turn to speak”.

Question Schedule

Question 1: Please tell me about your experience, what was it / has it been like for you learning mindfulness techniques?

Prompts:

What did / do you think about it?

Was / is it hard or easy to do?

How did / do the techniques make you feel?

Question 2: Tell me about your experiences of using mindfulness practice in your lives?

Prompts:

Why did you use mindfulness?

What changes did it make?

How did it make that change?

Question 3: In your experience, what impact does mindfulness practice have for you?

Prompts:

How does it impact your thoughts?

How does it impact the way you feel?

How does it impact the way you behave?

Question 4: In your experience, what situations do you find mindfulness practice useful?

Prompts:

Has anyone used mindfulness at home? If so how?

Has anyone used it with his schoolwork? If so how?

Has anyone used it for anything else?

Question 5: Do you feel that your experience of learning mindfulness has changed you at all, If so, how?

Prompts:

Has it changed your outlook on things?

Question 6: What are the barriers to you practicing mindfulness more regularly?

Prompts:

What things make it hard to practice?

Internal / external

Question seven: What would make you more likely to use mindfulness practice?

Prompts:

Would you like to use it more often?

Question Eight: Do you think it would be beneficial for other pupils to learn mindfulness practice?

Prompts:

Why?

What impact may it have for them?

What kind of pupil do you think would benefit?

APPENDIX J
School of Psychology Cardiff University
Annotated Focus group Transcript

Emergent Codes	Original Transcript	Exploratory Comments
<p><u>Interactive Lesson.</u></p>	<ul style="list-style-type: none"> • Ok so first thing that I wanted you to do. When did you guys do the mindfulness course? Was it... some of you have just finished and some finished last term right? • Yeah ok, so just thinking back to when you did the course. So when you were doing the lessons, can anyone start by telling me sort of what was your... what was your experience of the lessons? Is it something that you took to easily? What did you think about them, was it hard to do? ○ Well there was more of a like laid back approach about it and like with um... so it's all sort of about your body and um sort of quite a lot of sitting in silence or um focusing attention on bits of your um body and so not so much... um it was more like sort of interacting with the pupils sort of getting pupils to tell you what to do. Whereas in normal lessons it's more like the teacher tells you notes and you write it down. 	

<p><u>Applicable to sport.</u></p> <p><u>Applicable to stress.</u></p> <p><u>Classroom environment as a barrier.</u></p> <p><u>Lack of space as a barrier.</u></p> <p><u>No of people as a barrier.</u></p>	<ul style="list-style-type: none"> • Ok so what did you guys think about it? What did you think about mindfulness as a lesson? • I thought you could never find like sitting down and doing nothing like fun but it's like awesome. • So did you find it fun then? ○ Err... yeah I actually did and it's quite easy to do for like sport and also stress and so... • Anyone else find that? ○ It's a good change from the normal lessons. • Anyone feel differently towards it? ○ Well yeah, I didn't think it was like kind of like appropriate for like a classroom. • Ok why's that? ○ Because all the stuff was like sitting down and concentrating and when you're in a classroom environment with lots of people it isn't always very appropriate if you need the space. • Did anyone else find that? With lots of other people around it hard to do? ○ Yeah 	<p><i>"Pupil found that the classroom environment was not appropriate for doing mindfulness techniques. He found that there was too many people and not enough space".</i></p>
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<p><u>Peers behaviour as a barrier.</u> <u>External noise as a barrier.</u></p> <p><u>Experience transformed initial skepticism.</u></p> <p><u>Increased awareness of the influence of the mind (general – learning).</u></p>	<ul style="list-style-type: none"> ○ Yeah ○ Yeah like when you're distracted by something, like a car or something and someone laughs and you laugh as well. ○ It's contagious ● So what did you, say before you even had the lesson, what was your thoughts on what mindfulness was? Is it something that you were skeptical about? ○ Before the actual like lessons I thought it would be kind of a bit kind of 'arty-farty' in a way. Kind of not really like a serious lesson. But then, when you get into it, you realize that the actual techniques do actually... you do respond to them and they do actually work. But I'm not sure whether as a lifestyle in itself, whether it would be too useful. ○ I think it was really good, because the mind does like control loads about your body, like more than people think. So it can affect stress and also like, how it can make you ill more if you're stressed and had more effect than people would initially think. So it's really good to have lessons on that because it's not like normal lessons and with the growing pressures of like school and stuff people can get run down by like extra work load and they wouldn't think it was to do with their mind which is why they are getting run down. They think it's, I don't know for some other reason but it is actually all linked up and 	<p><i>Pupil found that their peers could be a distraction”.</i></p> <p><i>“Pupil changed their perception of the course when they tried the techniques”.</i></p> <p><i>Techniques are useful but not as a daily lifestyle.</i></p> <p><i>“Pupil demonstrates an awareness of the influence of the mind on the body and performance”.</i></p>
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<p><u>Mindfulness labeled positive feeling. (general-learning)</u></p> <p><u>Lack of achievable outcome as a barrier.</u></p> <p><u>Lack of achievable outcome as a barrier.</u></p>	<p>err... the mind can sort of overcome it, can help you and make you perform better.</p> <ul style="list-style-type: none"> • Ok so is that something? How many of you guys thought it was something, a new way of thinking and looking at things and how many thought either that's a load of rubbish or I thought that way anyway? ○ I made me think, "Well when I thought that way I did well at something" so yeah. • So it's a way you have thought before? ○ Yeah but didn't know it. • Anyone else? ○ I thought it was a new way, but I didn't think it was a very worthwhile way of thinking. <u>I thought that it was kind of a bit pointless thinking that way because it didn't really achieve anything.</u> • Ok so tell me about that. ○ Well kind of like focusing on <u>like as babyish like as you could. I didn't think it was very progressive, in like academics and stuff.</u> • Ok, so just, just thinking about things isn't gonna... ○ Yeah I think you have to work with it. You can't just think about things to make them happen. 	<p><i>"Reminded him that when he has thought similarly in the past he has had positive outcomes".</i></p> <p><i>"Raised the pupil's awareness of "mindfulness" as a label to a feeling he has already felt.</i></p> <p><i>Perception that it doesn't achieve anything as a barrier.</i></p>
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<p><u>Perception of patronizing as a barrier.</u></p> <p><u>Alternative strategies as a barrier.</u></p> <p><u>Perception as patronizing as a barrier.</u></p>	<ul style="list-style-type: none"> • Ok anyone else have that? ○ I thought that at times it could be a bit patronizing. Like you need to have to have all these coping mechanisms to deal with like normal emotions and i just thought like at times it could come across like a bit wimpy in a way. • Ok that's interesting. Tell me a bit more. ○ Well how you need to... say if you need to do 'Seven – Eleven's to get to sleep. Or if you're under pressure too much. Or say if you've got like relationship problems, I just think, you know the techniques can be a bit patronizing. • Ok so people can deal with it without it. Why do you need? ○ Exactly yeah • Ok ○ Well when sort of dealing with pain, most people tell you to ignore it, but with mindfulness you're sort of meant to turn your attention towards it, which is odd at first, but um I think it will work. I haven't had to use it but... • It's something you could use if the time came? ○ Yeah 	<p><i>Pupil has perception of concept as "patronizing". They think the idea that you need alternative strategies to deal with emotions is bit "wimpy".</i></p> <p><i>Perception as "wimpy" if you need to use mindfulness to get to sleep.</i></p>
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<p><u>Perceived lack of time as a barrier.</u></p> <p><u>Perceived lack of experience as a barrier.</u></p> <p><u>Preformed beliefs as a barrier.</u></p> <p><u>Comparisons with monastic tradition as a barrier.</u></p> <p><u>Change in perspective (general).</u></p>	<ul style="list-style-type: none"> • Ok <ul style="list-style-type: none"> ○ <u>I think it's something that takes quite a while to get used to.</u> So like you have the monks who are like in Tibet who spend like hours and hours, like thousands of hours practicing it and their really good at it. But the... <u>for like us who don't have time to practice it thousands of hours it would be like um, it might not be as helpful because it's harder to like train your mind to think about things in a totally different way to what we are used to, being growing up as... and so like yeah.</u> • Do we think... do you think it's a completely different way of thinking then? <ul style="list-style-type: none"> ○ Yeah ○ Yeah ○ Yeah definitely • How about you guys <ul style="list-style-type: none"> ○ Yeah same • So what is it that's different then? What is it that's a different way of thinking? <ul style="list-style-type: none"> ○ <u>You never really think about what your eating... and mindful mouthful I wouldn't have thought that before.</u> 	<p><i>Pupil has perception that it takes a long time to become skilled in the techniques."</i></p> <p><i>Perception that they have a lack of time to spend practicing. This is a barrier to engagement. Also, comparisons with monastic tradition mean they don't feel they will be able to gain as much benefit.</i></p> <p><i>"Pupil notes that mindfulness is a way of thinking that differs from what they have been brought up to believe. As such it is harder to engage with.</i></p>
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<p><u>Confidence in ability to deal with problems (general).</u></p> <p><u>Perceived lack of time as a barrier.</u></p> <p><u>Forgetfulness as a barrier.</u></p>	<ul style="list-style-type: none"> • Ok and you talked about the pain, so that's a different way of viewing pain. Anything else that's... ○ Well everything is sort of controlled by the mind, so you can... anything almost you can, that's due to emotion you can overcome even if it's like a physical sense like pain you can actually overcome it. Whereas normally we think of it as just being like an effect of something that just happens and you have no control over it when actually with training you can um you effect more and change more and be more in touch with your body and control it better • So how many of you think it's something that you either do use, or will use and how many think it's something nice to learn about but not really for me? If we just go round... ○ Well I enjoyed the lessons, but I don't think I'll use it. • Ok why don't you think you'll use it? ○ Well I don't really have the time and I don't really think about using it. So... • Right ok, do you think there will ever be a time when you'll use it? ○ Maybe yeah, but not that much. • Ok how about you? 	<p><i>Pupil demonstrates increased confidence that they can deal with emotions and pain.</i></p>
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<p><u>Alternative coping strategies as a barrier.</u></p> <p><u>Induces relaxation (general).</u></p> <p><u>Relaxation in exams.</u></p> <p><u>Helps sleep when stressed</u></p>	<ul style="list-style-type: none"> ○ Um yeah the lessons were really interesting I could use it in some situations but I mean I haven't had to yet. I'm sort of coping fine. • So what situations do you think you might use it? ○ Maybe like someone said, stress or something. Relationships, when you need to just step back and do something, get something done. • Ok ○ I'd say I only really use it for relaxation, even though we were told it's not for relaxation technique. It's really the only period I think I'd use it for. • Have you used it to relax? ○ A few times yeah, for like exams and stuff. • So how did you use it? ○ Just sort of breathe and notice the breathing and stuff. • So is it a physical relaxation then? ○ Yeah ○ I've used it to get off to sleep, coz sometime I can't get off to sleep. Coz there's too much stress or something. • So how do you use it to go to sleep? 	<p><i>The pupil feels that the already have the ability to cope using alternative strategies. This is a barrier to the use of mindfulness.</i></p> <p><i>Helps to relax during exams</i></p> <p><i>"Pupil finds mindfulness breathing helpful in getting</i></p>
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<p><u>Induces relaxation (sleep)</u></p> <p><u>Reduction in unwanted thoughts (sleep).</u></p> <p><u>Perceived lack of impact as a barrier.</u></p> <p><u>Perceived lack of time as a barrier.</u></p> <p><u>Helps sleep when stressed.</u></p> <p><u>Helps to relax during exams.</u></p>	<ul style="list-style-type: none"> ○ I'd do a 'Seven – Eleven'. ● That's a breathing one yeah? ○ Yeah just relax ● So what does it do to your thoughts then? ○ Just takes them away and you just kind of go to a peaceful state. ● Ok what about you? ○ I used it like, instead of doing something like watch TV, just sort of walk around and go outside but I haven't really... I don't think you can get that much out of it. ○ Well in school, there's so much going on that it's hard to find time to do some of the lessons. But um I've used it to get off to sleep um sort of the 'Beditation' which is the lying down body scan and um and it helped me coz sometimes there is so much going on that and I just can't get to sleep. ● Ok ○ Yeah I've practiced the breathing exercise right before exams when it was really stressful conditions and it sometimes helps to relax but it's something that err I think that almost everyone does subconsciously. So it... the class just helps you, makes you know about the fact 	<p><i>to sleep. They feel that it combats stress that prevents them sleeping.</i></p> <p><i>Pupil notes a perceived reduction in conscious thought that induces a relaxed state of mind facilitative of sleep.</i></p> <p><i>Pupil feels that other activities take priority over mindfulness and therefore perceives that they have a lack of time to engage in it.</i></p> <p><i>Useful in dealing with stress during exams.</i></p> <p><i>Pupil notes that they feel that it is a common way of thinking and doesn't require techniques to bring</i></p>
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<p><u>Perception that already doing it as a barrier.</u></p> <p><u>Confidence in applying.</u></p> <p><u>Appreciation of life. (general – learning)</u></p> <p><u>Course length as a barrier.</u></p>	<p>that something you do subconsciously but technically you don't need the class coz it's something you already know.</p> <ul style="list-style-type: none"> • Something you know already. Is that... coz that's different to what some people, some people said it's a very different way of thinking. ○ Some parts of it you already know it's just the class lets you know that you already do it before and how to utilize it. • Ok, Ok. ○ Well I haven't used any of the actual techniques but I found that the course had made me appreciate being alive more. So you notice like stuff like the air so you would have never noticed like the air on you skin or anything, but you kind of look around and then see like... kind of appreciate actually being alive more. • Ok that's interesting. ○ I thought taking heed of the kind of main ideas, like relaxation being important and stuff, but I need to have sort of more lessons in it to be more... to be taught more for it to be take an active part and I think it's what XXX says, it's some of the techniques are like we do already use but its more sort of bringing them to our attention and um making us aware of them and then maybe using them more. 	<p>about.</p> <p><i>“Pupil notes that although they don't use any of the mindfulness techniques they feel that learning about mindfulness has given them an increased appreciation of life in general.</i></p> <p><i>Pupil feels that they need more lessons or more practice to know how to utilize mindfulness more readily.</i></p>
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<p><u>Forgetfulness as a barrier.</u></p> <p><u>Perceived lack of influence over time.</u></p> <p><u>Course length as a barrier.</u></p>	<ul style="list-style-type: none"> • Right ok ○ Yeah I use them occasionally, but like in five, ten years time I will have completely forgot about it, so it's not really gonna benefit me then. • So do you think you will remember or do you think it will gradually drift out of your? ○ It's a really good idea and it should be... um it's good, but it needs to be taught more to be remembered because we have it like once or twice a fortnight and we've had it for say like six weeks and then that's it pretty much. So if it could be taught more, then it would have more and go into more depth then it would have more of a lasting impact because... • Just to get a gauge then. If it was... how many if it was taught more regularly, how many of you would engage with it and how many would not engage with it? Say it wasn't compulsory. ○ Nope ○ Nope ○ I'd probably attend the odd class, but I wouldn't go to all of them. • Ok ○ I reckon I'd do it. 	<p><i>Pupil feels that the course is too short to make a long-term impact on pupil's lives.</i></p>
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<p><u>Perceived detrimental impact on other activities as a barrier.</u></p> <p><u>Perceived low priority as a barrier.</u></p> <p><u>Perceived detrimental impact on homework as a barrier.</u></p>	<ul style="list-style-type: none"> ○ Same as him, like I would attend. ○ If it was optional, um I'm not sure because I have lots of prep and other stuff and it might make me behind. But if it was built in with the um timetable it would be definitely worthwhile. But it might ... ● Ok so it sounds like there's... at school you've got priorities of things that are more or less important and mindfulness, it would be great if you had the time and... ○ We are working for exam results at the end of the day and we need to... and it wouldn't help, well it would help but you know, I think um homework and keeping on top and stop you getting punished for not doing homework yeah so. ● Anyone else? ○ If we know in advance what that class is going to teach, like the schedule. I'd probably go to those classes that would um benefit me and those that I'm interested in. ● Ok ○ Yeah I'd go to those classes because err we were told the techniques become more useful err with time. ● Do you agree with that? That if you use them over time more regularly that they might have more of a benefit? 	<p><i>Pupil suggests that that other activities in their day come first, so if doing mindfulness interferes with other activities it is likely not to be practiced. If it is built into timetable then no feeling of missing anything.</i></p> <p><i>Even though they pupil recognizes that it will help them they perceive that academic performance and homework need to be done first. This is a reason for not adding another thing into their day. Its not the time for it.</i></p>
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<p><u>Course length as a barrier.</u></p> <p><u>Perceived lack of understanding.</u></p> <p><u>Perceived benefit with exams.</u></p>	<ul style="list-style-type: none"> ○ I think after, after having done it for six or seven weeks we don't really fully understand what they could do. We've just like touched on a huge topic. ○ I reckon the classes we would go to would be really interesting and inform me more and that sort of stuff. ○ I think it could be a good programme to have during times of like... such as exams or any like events so say like GCSE's coming up then like a few months before, you could give them a mindfulness programme that you could attend that would be focusing on like certain aspects of like... if you were doing exams it would be focused on stress and like work, coping with work and so sort of more sort of focused on an idea rather than being in response to what we do in school. Like auxiliary back up to help you improve your, I don't know. ● If it was available then around exam times when you know quite a lot of stress say next year with your GCSE's. How many of you would want... if these lessons were running, how many of you would engage with it then? ○ Um yeah ● So just to get a show of hands how many of you would and how many wouldn't. So how many would engage in it at a time of stress say GCSE'S? ● Two, three, four, five. Ok so the rest of you 	<p><i>"Perception that they do not know enough about mindfulness from just a short term course".</i></p> <p><i>Perception that mindfulness can be helpful during stressful times like exams.</i></p>
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<p><u>Technique length as facilitator.</u></p> <p><u>Helps deal with stress (general).</u></p> <p><u>Absence of problems as a barrier.</u></p> <p><u>Improves revision.</u></p> <p><u>Reduces unwanted thoughts (work).</u></p>	<ul style="list-style-type: none"> ○ I think I probably wouldn't go during that sort of time. I'd rather use the techniques that I've learnt in my spare time coz the lessons would be quite long. Whereas some of the techniques are like five, ten minutes to improve a bit outside of school because maybe that hour we'd be in class I could spend 10 minutes doing my own like techniques or something and then do some revision or something. • Ok sorry, you were going to say something. ○ Yeah I was gonna say, if you are someone who suffers from stress a lot then the course is quite useful coz it does teach you some good techniques like the 'Seven – Eleven' but in terms of like... I'm not someone who gets bogged down or like depressed or stressed so I probably wouldn't see myself going back there if it was optional. • Is that something that people agree with? That actually, generally I'm all right so why do I need it? ○ Yeah ○ Well anything to help, coz it would still help. I reckon there's different ways of coping even if you're not obviously stressed you could still like not be revising to your maximum benefit you know. Say, even if you're not stressed, your mind might start to get like, feel really clogged and full and so it could like alleviate that or something. It's not just for like feeling really stressed but other just helping you learn as well because like the 	<p><i>Time length of technique is facilitative of use. The shorter the technique the better.</i></p> <p><i>“Useful to combat stress”</i></p>
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<p><u>Perception as unusual as a barrier.</u></p> <p><u>Induces calm (work).</u></p> <p><u>Reduced worry (work).</u></p> <p><u>Sustained focus (work).</u></p> <p><u>Improves work.</u></p>	<ul style="list-style-type: none"> ○ Well like earlier on it could get... maybe it's quite a big mindset of it being a bit 'wishy washy' and away with the fairies you know. Like "oh your mind controls everything" and so people could go into it thinking it's a load of rubbish and therefore wont want to accept it into their like, the school or anything. ● Ok does anyone agree? Do people agree with that? ○ Yeah ● Anyone disagree with that? ● Ok, has anyone used it you know for like with schoolwork? Not necessarily with revision but with work? ○ Yeah kind of like when I've got a load of prep. It's something I do to just like calm down and like don't worry about it. ● Ok is that a good thing or a bad thing? ○ It's a good thing ○ It keeps you focused, so you don't have any other distractions. ● Ok how does it do that? ○ You know like in the body scan we're supposed to find like a spot in our, you know anywhere, a spot in your 	<p><i>Pupil feels that the course can be viewed as strange and feels that the focus on the mind will be dismissed by some causing them to disregard it".</i></p>
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<p><u>Improved orientating attention (work).</u></p> <p><u>Reduces distractions (work)</u></p> <p><u>Improved work.</u></p> <p><u>Increased awareness of impact of stress (work).</u></p> <p><u>Lesson format as a barrier.</u></p>	<p>body and just focus on it like, instead of internalizing it you're externalizing your focus and you can give all your attention to your homework so you wont like be distracted by Facebook or music or like that.</p> <ul style="list-style-type: none"> • Um ok ○ I think it's taught me to relax. Like if I've got loads of prep and I'm just like feeling really tired it's probably better for me to just, you know go and watch TV for half an hour so I'm feeling better and then go and try and struggle through it. Coz then it could make you ill the next day. It builds up and then eventually it's like the straw that broke the camels back. So eventually it comes back to you. • So you're more aware of how stress builds up...in you own life? ○ Yeah • Ok, is there anything... do you think it would be beneficial for other pupils to learn. So not just necessarily in the. But do you think it's... it would be useful to have in school? ○ Um, I wouldn't say, um, no not really because it's not really a lesson. It should be, I don't think it should be a lesson in this school either I think it should be an activity like you do it in you're... • So why do you think that? 	<p><i>Ability to orientate focus of attention reduces the pupil's tendency to be distracted by other activities.</i></p> <p><i>"Pupil notes an increased awareness of how stress can negatively impact on learning and that this has taught them the value of relaxation.</i></p>
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<p><u>Length of course as a barrier.</u></p> <p><u>Perceived absence of problems as a barrier.</u></p> <p><u>Perception as unusual as a barrier.</u></p>	<ul style="list-style-type: none"> ○ Well because it's not a lesson. It's, you don't... you're being instructed. It's, it's you need more than lesson time to do it and in other schools if it want... like a private school then I don't think people would pay attention to it and it would be quite difficult to kind of um teach. • Ok ○ I think it would be really helpful but like in private schools people are generally like ok. But like in um some where people are really poor, there's like relationship difficulties or like um their having trouble with their family like a lot of tensions it could help there coz stress could build up and that's why you quite often get people who sort of um rebelling and then and so it would help with that but they would want to listen because otherwise they would just not appreciate if they want it. • So is it something that you have to want to work for it to work ? ○ Yeah ○ Yeah ○ Yeah like when I first heard of mindfulness I thought like "oh it's meditation and stuff, it's a kind of weird meditation". So I think that's like, a lot of other kids might think that and like may not kind of take it seriously and like muck around and it would be a waste of time. • Do you think there would be any way of making them, of 	<p><i>"Pupil feels that the course isn't long enough to enable you to do it properly?"</i></p>
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<p><u>Age as a barrier.</u></p> <p><u>Low priority as a barrier.</u></p> <p><u>Lack of intrinsic motivation as barrier.</u></p> <p><u>Transformed initial skepticism (general – learning).</u></p>	<p>making it, making that not happen?</p> <ul style="list-style-type: none"> ○ Well I think they'd need to recognize that it's like helping themselves and I'm not sure whether you know like the average 14 year old would be thinking about how to help themselves if it meant giving up 40 minutes of time maybe playing football. So I think... ● Football would take priority over mindfulness? ○ Yeah exactly ○ I think that is it. I don't think you can do it without um if you don't want to. If it was, if you force someone and enforce rules and sort of punish them then that's always going against the mindfulness sort of theme so I think that's like a restriction or limitation. I think people have to want to but if they were sort of educated about it before then they might or want but you can't force them. ● What about you? ○ Well when we first started I think the general attitude was "it's just going to be a doss" but I mean Mr. X made the lessons quite fun and like they were quite interesting. We used quite a few good examples, so everyone just sort of stopped messing around and um realized that it might help us so that's the attitude. ● Ok, so you said about, it's not really a lesson and that the techniques... it's ok to have the techniques but you don't need to have a lesson and you were saying you think 	<p><i>"Pupil perceives their age (14) as a barrier, noting that children will not recognize the impact that it could have for them. They also note that children are more interested in other things such as football".</i></p>
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<p><u>Lack of space as a barrier.</u></p>	<p>the lesson is actually quite important for you to want to do the techniques. So just to get an idea of where we all are on that as to who thinks that actually it's important to have the background and the lessons and who thinks actually we don't need that, the techniques are great, all we need are the techniques. Just stick your hands up, who think the lessons are an important part of it?</p> <ul style="list-style-type: none"> • Ok so that's the vast majority. ○ I didn't say the lessons aren't important. I said the classroom environment is not great and I said that if it was an activity where it's after school. So it's not sitting down at a desk without being... • Ok so is it because it's in that classroom environment it has kind of a lesson context? ○ Yeah and that's what I didn't think was very good about it. • Ok so where elsewhere do you think you could have it? ○ A big empty room similar to this. Or outside. • Ok and do we think that it should be an optional thing? Not something that's... ○ Yeah I think optional. ○ I think the system is fine, because that fact is that like if it's lessons I'd rather be doing this than like physics or 	
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	<p>something so it kind of encourages people and then they start liking it.</p> <ul style="list-style-type: none">• Ok○ I think like the first six or seven weeks should be compulsory just to get, kind of give you a taster, and then make the others like optional so if people like it they can come again but people who don't, don't.• What sort of percentage of people do you think would carry on with it? Just from you guys knowing your mates?○ Sixty percent maybe.• Really, that high?○ No twenty five percent.○ Ten percent, well if it wasn't kind of, you didn't have to go.• If it was an optional thing at here?○ I think forty percent.○ I think it would fluctuate with times of exams and pressures, so times when there's nothing going on.• That's interesting because some people have said actually during times of real stress it would be something	
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<p><u>Peer behaviour as a barrier.</u></p>	<p>messing around, someone might laugh and the you get like a chain reaction or just when you're trying to sit reasonably trying to do one of the exercises, someone might sort of snigger and that would focus your attention on that.</p> <ul style="list-style-type: none"> • Ok did you want to say something? ○ Um well yeah, I think we have pursuits after lunch on Mondays and Fridays when it's just 50 minutes to do, pursue anything you want to do and I think a lot of people would use that as perhaps being... I reckon if there was a class there that some teachers might say "if you guys ..." ○ I don't really think it should be optional, but as a Rota so like um I don't know, every um... like um two times a week they run mindfulness sessions and say two people from each house go, each like, each session so like once every like three weeks or two weeks from each year you'd be like going again and again and again and so that would be like just keeping it ticking over in the background. So it stays in your mind but then you still get the benefits from it because some people won't turn up at all. 	
<p><u>Forgetfulness as a barrier.</u></p>	<ul style="list-style-type: none"> • So what do we think generally the benefits are? If that was the case, if it was working. Say mindfulness was working to absolutely the best you could hope for individually, what do you think would change? ○ Concentration levels, overall happiness levels that's the 	<p><i>"Pupil notes that they would like to have regular reminder sessions to keep the ideas fresh in their mind".</i></p>

<p><u>Perceived lack of ability as a barrier.</u></p> <p><u>Lack of concentration as a barrier.</u></p> <p><u>Improved awareness (sport – working).</u></p> <p><u>Improves task performance (work).</u></p> <p><u>Clarity of mind (work).</u></p> <p><u>Induces optimal learning.</u></p>	<p>main idea of it isn't it to make people more happy.</p> <ul style="list-style-type: none"> • But from your experience of learning it, do you see that that might happen or... <ul style="list-style-type: none"> ○ It could, but it... you need to be really good at it and to be really good at it you need to... you have to kind of go through some kind of pain anyway. You have to really concentrate, really hard and it's quite difficult to be accomplished really. • Ok is that something that we think across the board, that actually it's a hard thing to do? <ul style="list-style-type: none"> ○ Yeah it's quite hard. ○ I think it probably improves awareness and sharpness of mind either in the sports field or when you're working. So it's being more aware of your surroundings and all things that are happening. • Has anyone used it on the sports field? <ul style="list-style-type: none"> ○ I know a few people that have like. ○ I think it makes you more efficient working to the best of your ability and to um... you'd have more energy so you can like not get bogged down with any work. Like in class you'll be working sort of better because there will be nothing on your mind and you probably wont be so tired even so basically it would be sort of like you walk round on your optimum like or closer to optimum level. 	<p><i>Increases ability to learn by reducing cognitive rumination or unwanted thoughts bringing about optimal learning.</i></p>
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<p><u>School play .</u></p> <p><u>Induces calm (play).</u></p> <p><u>Reduced impact of negative thoughts (play).</u></p>	<ul style="list-style-type: none"> • Anyone got any other experiences, anyone used in it anything... about situations outside the classroom again, anyone used it in any weird and wonderful ways? ○ I used it before the school play. • Ok ○ I was just like stressed and did like a ‘Seven – Eleven’ and it was quite straight forward and I would do rehearsal until sort of eight, nine o clock every night. • So what would it do then? ○ Well it calms you down, especially when you’re trying to remember your lines and things um... • Does it change the way you think about it at all or? ○ No it’s sort of just focusing on like relaxing your mind, making sure you’re not getting bothered by things and not letting anything get in the way and that. • Anyone else? Any other situations? • Nope, well then you will be relieved to know that there are no more questions. 	
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APPENDIX K
School of Psychology Cardiff University

Focus Group Themes (IMPACTS)

Red – Focus Group one (School A)

Blue – Focus Group two (School A)

Green – Focus Group three (School B)

Theme One: Calm & Relaxation

“ Perception that mindfulness induces a sense of Calm and Relaxation”.

Sub-Theme One: Personal Calm and Relaxation

“Perception that mindfulness makes pupils’ themselves feel relaxed and calm”

- Calming effect (General)
- Induced state of relaxation (General)
- Induced relaxation (General)
- Positive feeling (General)
- Calming effect (Exams)
- Induced sense of calm (Sleep)
- Induces relaxation (Sleep)

- Helps deal with stress (General)
- Induces relaxation (General)
- Relaxation in exams (Work)
- Helps to relax during exams (Work)
- Induces calm (Work)
- Induces relaxation (Sleep)
- Induces calm (play)

- Induces calm (Work)
- Induces calm (IP)
- Induces calm (IP)
- Induces calm (IP)
- Use of breath to induce calm (Interpersonal)
- Induces calm (Interpersonal)
- Induces calm (Interpersonal)

Sub-Theme Two: Group Calm

“Perception that mindfulness impacts on the calmness of the class group”.

- Facilitates group quietness.
- Facilitated group focus
- Facilitated group quiet
- Induced relaxed atmosphere.
- Facilitated group calmness

Theme Two: Altered Perspective

“Perception that mindfulness has alters pupils’ outlook on life”.

- Change in perspective (general)
- Increases awareness of inequality (general)
- Induces sense of equality (general)
- Transformed perspective on mindfulness (general)
- Alternative coping strategy (general)

- Change in perspective (general)
- Change in perspective (general – learning)
- Appreciation of life (general – learning)
- Transformed initial skepticism (general – learning).
- Experience transformed initial skepticism.
- Transformed initial skepticism.

- Transformed initial skepticism.
- Transformed initial skepticism
- Transformed Skepticism
- Group agreement that course transformed initial cynicism
- Transformed negativity

Theme Three: Self-Transformation

“ Perception that mindfulness has transformed pupils’ perception of themselves”

Sub-Theme One: Self-Perception

“Perception that mindfulness impacts on the way pupils view themselves”

- Improves self –perception (general – learning)
- Confidence in applying
- Confidence in ability to deal with problems (general)
- Increased awareness of internal states (general – learning)
- Encourages self- reflection (general – learning)
- Increased awareness of the influence of the mind (general – learning)
- Confidence in ability to control mind (general)
- Positive approach to challenge (General)
- Positive approach to new experiences (General)
- Perspective taking (general)

Sub-Theme Two: Metacognitive Awareness

“Perception that mindfulness impacts pupils’ ability to perceive the workings of their own mind”

- Metacognition (general)
- Increased metacognitive skills (general)
- Metacognitive stance (general)
- Metacognition (general)

Theme Three: Control

“Perception that mindfulness impacts pupils’ ability to process and manipulate information stimuli”

Sub-Theme One: Cognitive Control

“Perception that mindfulness impacts the way in which pupils’ cognitively process negative information”.

- Reduction in ‘overthinking’. (General)
 - Clarity of thought (general)
 - Increased ability to rationalize thoughts (general)
 - Rationalize thoughts (general)
 - Confidence in ability to control mind (general)
 - Reduction of intrusive thoughts (test)
 - Improves revision by reducing unwanted thoughts (nerves)
 - Reduced rumination and worry (Sleep)
 - Reduction of intrusive thoughts increases empathy (Interpersonal).
 - Increased thought prior to action (Interpersonal)
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- Reduction in unwanted thoughts (Sleep)
 - Reduces unwanted thoughts (Work)
 - Clarity of mind (Work)
 - Reduced impact of negative thoughts (Play)
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- Reduced catastrophizing of thoughts (Interpersonal)
 - Rationalization of thoughts (Interpersonal)
 - Rationalization of thought (IP)
 - Rationalization of thoughts (IP)
 - Rationalization of thoughts (IP)
 - Rationalization of thoughts (General)

Sub-Theme Two: Emotional Control

“Perception that mindfulness impacts the way in which pupils manage negative emotions”.

- Cope with worry about tests. (Work)
- Reduces frustration caused by difficult work Reduces aggressive behaviour (interpersonal)
- Rational response (IP)
- Reduces frustration (interpersonal)
- Reduces interpersonal frustration
- Reduces frustration (interpersonal)
- Reduced impact of negative emotion (interpersonal)
- Use of breath to induce calm (interpersonal)
- Reduced frustration (IP)
- Reduces influence of negative emotion (IP)
- Reduced frustration caused by misbehaving peers (IP)
- Improved emotion regulation (IP)
- Reduces anger (IP)

Sub-Theme Three: Attentional control

“Perception that mindfulness influences pupils’ attentional capabilities”.

- Increased ability to orientate attentional field (general)
- Increased ability to orientate attentional field (general)
- Enhanced focused attention –Alerting (general)
- Increases ability to focus (Alerting) (work)

- Sustained focus (work)
- Improved orientating attention (work)
- Reduces distractions (work)
- Improved awareness (sport – working)

- Improved concentration (work)
- Reduced influence of external distractions (work)
- Improved focus (work)
- Increased focus (work)
- Reduced distractibility (work)

Theme four: Behavioural Functioning

“Perception that mindfulness impacts pupils' behaviour in certain scenarios”.

Sub-Theme One: Academic Functioning

“Perception that mindfulness impacts the way pupils' function in academic contexts”

- Improved concentration (work)
 - Reduced influence of external distractions (work)
 - Improved focus (work)
 - Increased focus (work)
 - Reduced distractibility (work)
 - Perceived benefit to work (work)
 - Cope with worry about tests. (Work)
 - Reduces frustration caused by difficult (work)
 - Induces calm (work)
 - Less disruptive behaviour (work)
 - Test behaviour.
-
- Helpful in tests
 - Perception that mindfulness improves ability to work
 - Reduction of intrusive thoughts (test)
 - Improves revision by reducing unwanted thoughts (nerves)
 - Increases ability to focus (Alerting) (work)
 - Calming effect (exams)
 - Preparation to work
 - Reduces nervousness in exams

- Relaxation in exams
- Helps to relax during exams
- Induces calm (work)
- Perceived benefit with exams
- Improves revision
- Improves learning
- Improves work
- Improved work
- Improves task performance (work)
- Induces optimal learning
- Reduces unwanted thoughts (work)
- Clarity of mind (work)
- Reduced worry (work)
- Increased awareness of impact of stress (work)
- Sustained focus (work)
- Improved orientating attention (work)
- Reduces distractions (work)
- Improved awareness (sport – working)

Sub-Theme Two: Improved Sleep

“Perception that mindfulness helps pupils’ to get to sleep”

- Improved ability to sleep
- Induced sense of calm (Sleep)
- Induces relaxation (Sleep)
- Reduced rumination and worry (Sleep)
- Induces relaxation (sleep)
- Reduction in unwanted thoughts (sleep)
- Helps sleep when stressed
- Helps sleep when stressed

Sub-Theme Three: Interpersonal Communication

“Perception that mindfulness impacts of the way pupils’ resolve conflicts and engage with relevant others”.

- Improved interpersonal communication
- Benefits interpersonal communication Coping strategy for interpersonal dispute (ip)
- Interpersonal disputes
- Reduces aggressive behaviour (interpersonal)
- Rational response (ip)
- Reduces frustration (interpersonal)
- Reduces interpersonal frustration
- Induces calm (interpersonal)
- Induces calm (interpersonal)
- Reduces frustration (interpersonal)
- Reduced impact of negative emotion (interpersonal)
- Use of breath to induce calm (interpersonal)
- Reduced frustration (ip)
- Induces calm (ip)
- Reduces influence of negative emotion (ip)
- Induces calm (ip)
- Induces calm (ip)
- Reduced frustration caused by misbehaving peers (ip)
- Improved emotion regulation (ip)
- Reduces anger (ip)
- Reduced catastrophizing of thoughts (interpersonal)
- Rationalization of thoughts (interpersonal)
- Rationalization of thought (ip)
- Rationalization of thoughts (ip)
- Rationalization of thoughts (ip)

- Empathy (interpersonal)
- Increased empathy (interpersonal)
- Reduction of intrusive thoughts increases empathy (interpersonal).
- Pro-social behaviour (Interpersonal)
- Improved emotional recognition (interpersonal)
- Increased emotional recognition (Interpersonal)
- Reduction of intrusive thoughts increases empathy (interpersonal).
- Increased thought prior to action (interpersonal)

APPENDIX L
School of Psychology Cardiff University

Focus Group Themes (BARRIERS)

Red – Focus Group one

Blue – Focus Group two

Green – Focus Group three

This is split into sections:

1. *Barriers regarding the impact of the course in general*
2. *Barriers regarding the impact of mindfulness techniques*

Perceived barriers to the impact of MiSP course (What do pupils feel are the factors that limit pupils engagement in the MiSP curriculum and reduce their use of mindfulness outside lessons)

1. **Course length** (Not long enough to develop skills, experience and understanding to apply in daily life).

Course length as a barrier to effectiveness (Too short)

Course length as a barrier to effectiveness (Too short)

Perceived lack of experience as a barrier (due to course length)

Course length as a barrier to use (Too short)

Length of course as a barrier to use (Too short)

Length of course as a barrier (Too short)

Perceived lack of experience as a barrier (due to course length)

Course length as a barrier (Too short)

Course length as a barrier (Too short)

Course length as a barrier (Too short)

Perceived lack of understanding (due to course length)

Length of course as a barrier

2. Forgetfulness (*Pupils report that they don't think about using mindfulness. They forget about it once lessons have finished*).

Forgetfulness as a barrier to use
Forgetfulness as a barrier
Forgetfulness as a barrier
Forgetfulness as a barrier to use
Lack of exposure post course as a barrier
Reminders facilitate use
Forgetfulness as a barrier
Forgetfulness as a barrier

3. Perceived lack of need as a barrier to use.

Absence of Problems: (*Pupils perceive that they do not use mindfulness unless they have a significant problem*).

Absence of problem as a barrier
Absence of problems as a barrier
Perceived lack of need as a barrier
Alternative strategies as a barrier
Absence of problems as a barrier to use
Absence of problem as a barrier
General wellbeing as a barrier to use
Absence of problem as a barrier
Problem significance as a facilitator
Significance of problem as a facilitator
Significance of problem as a facilitator
Significant problem as a facilitator
Perception as patronizing as a barrier
Absence of problems as a barrier
Perceived absence of problems as a barrier

4. **Perceived lack of applicability to daily life** (*Pupils perceived that the techniques taught in the classroom had limited applicability in their lives, they didn't see how they could apply them*).

Practicality outside classroom as a barrier

Perceived lack of application outside the classroom as a barrier

Lack of implementation in classes as a barrier

Lack of applicability as a barrier to use

Lack of application to daily life as a barrier

5. **Perceived lack of time** (*Pupils perceived that they do not have enough time to practice mindfulness*)

Perceived time consumption as a barrier

Structured time as a facilitator

Time as a barrier

Perceived lack of time as a barrier

Perceived lack of time as a barrier

Perceived lack of time as a barrier

Time consumption as a barrier

6. **Perceived influence of peers** (*Pupils perceived that engagement in mindfulness practice is negatively influenced by perceptions of their peers*).

'Peer pressure' (perceptions of others) as a barrier to engagement

Peer pressure as a barrier

Peer pressure as a barrier

Peer influence as a barrier

Peer influence as a barrier

Peer influence as a barrier

7. Perceived barrier of pupils' age (*Pupils believe that their age or stage of development was a barrier to using mindfulness*).

Age perceived as a barrier

Age as a barrier to effective use

Age as a barrier to proactive use

Age as a barrier to proactive use

Age as a barrier to use

Age as a barrier

8. Preformed beliefs as a barrier (*Pupils believed that preformed beliefs about mindfulness are a barrier to engagement*).

Negative religious connotations as a barrier

Personal beliefs / assumptions as a barrier

Culture beliefs as a barrier

Peoples over emphasis on action as a barrier

Skepticism as a barrier

Negative religious connotations as a barrier

Perception of being boring as a barrier

Negative connotations as a barrier to engagement

Perceived lack of relevance as a barrier

Perceived negative association as a barrier

Lack of achievable outcome as a barrier

Lack of achievable outcome as a barrier

Perception of patronizing as a barrier

Preformed beliefs as a barrier

Comparisons with monastic tradition as a barrier

Perception as unusual as a barrier

Perception as unusual as a barrier

Initial unfamiliarity as a barrier

Unfamiliarity as an initial barrier

Unfamiliarity as a barrier

9. **Other priorities** (*Pupils perceived mindfulness practice to be a lesser priority to other activities*)

Perceived low priority as a barrier

Low priority as a barrier

Lack of intrinsic motivation as barrier

Alternative activities as a barrier

Perceived detrimental impact on other activities as a barrier

Perceived detrimental impact on homework as a barrier

Other activities as a barrier (low priority)

Perceived barriers to the impact of mindfulness techniques taught (*What did pupils find where the barriers to the impact of mindfulness techniques.*)

1. **Perceived lack of ability** (*Pupils perceive their own ability as a barrier to the impact of mindfulness techniques.*)

Lack of guidance as a barrier to effectiveness

Lack of mastery (skill in process) as a barrier

Perception of personal inability as a barrier

Perceived lack of ability as a barrier

Perception of own ability as a barrier

2. **Technique length** (*Pupils perceived shorter techniques to be more effective than longer ones.*)

Length of technique as a barrier

Length of technique as a barrier to engagement

Technique length as facilitator

Shorter techniques facilitate engagement

3. Difficulties sustaining concentration (*Pupils perceived difficulties in sustaining attention due to internal and external distractions as a barrier to impact of techniques*).

Distractibility as an initial barrier

Distractibility as a barrier

Distraction as a barrier to effectiveness

Distractibility as a barrier

Personal distractions as a barrier

Lack of concentration as a barrier

External noise as a barrier

Orienting attention tasks increases difficulty

Sustaining focus (attention) as a barrier

Increased awareness of external surroundings barrier

External distractions as a barrier to use

4. Emotional response as a barrier (*Pupils perceived that their own negative emotional response was a barrier to effectiveness e.g. boredom and frustration*).

Frustration as a barrier to effectiveness

Boredom as a barrier

Boredom as a barrier

Boredom as a barrier

5. Impact of Environment (*Pupils perceived environmental factors such as peer behaviour, space and noise as a barrier to impact of techniques*).

Peers behaviour as a barrier

Peer behaviour as a barrier

Peer behaviour as a barrier

Classroom environment as a barrier

Lack of space as a barrier

No of people as a barrier

External noise as a barrier

School environment as a barrier

Lack of space as a barrier

6. Lack of Activity (*Pupils found that the lack of physical activity and fun in the course was a barrier to impact*).

Lack of activity as a barrier

Lack of activity and noise as a barrier

Lack of fun as a barrier

Lack of activity as a barrier

APPENDIX M

School of Psychology Cardiff University

Parental consent form for Interview

I understand that my consent for my child's involvement in this research will involve their participation in an individual interview following their completion of the .b mindfulness curriculum delivered in school. The interview will explore their experiences of mindfulness and the personal impact of the mindfulness curriculum. This interview will be recorded via Dictaphone and should take no longer than 1 hour to complete.

I understand that my child's participation in this study is entirely voluntary and that he / she can withdraw from the study at any time without giving a reason.

I understand that the information provided by my child will be stored confidentially and destroyed immediately after transcription. Following transcription, data will be made anonymous so that it is impossible to trace back to an individual pupil. I also understand that either my child or myself is able to withdraw their data from the study up to the point that the data has been made anonymous when it will no longer be possible to trace data back to pupils individually.

I understand that I am free to ask any questions at any time. I am also free to withdraw my child from participation in this study and discuss my concerns with the supervising member of staff (Dr Jean Parry, Professional Tutor DEdPsy Cardiff).

I also understand that at the end of the study, participants will be provided with additional information and feedback about the purpose of the study.

I, _____(NAME) consent my child to participate in the study conducted by Robert Kempson School of Psychology, Cardiff University with the supervision of Dr Jean Parry, School of Psychology, Cardiff University.

Signed:

Date:

APPENDIX N

School of Psychology Cardiff University

Pupil Interview Consent Form

I understand that my participation in this project will require my participation in an interview regarding my experience of mindfulness and the personal impact of the Mindfulness course I completed in school. This process should take no longer than 1 hour of my time.

I understand that the interview will be recorded via Dictaphone and that this data will be kept confidentially and destroyed immediately following transcription. I also understand that following transcription, my data will be made anonymous in order that it is impossible to trace this information back to me individually.

I understand that my participation in this study is entirely voluntary and that I can withdraw from the study at any time without giving a reason and can withdraw my data from the study up until the point at which it is made anonymous.

I also understand that at the end of the study I will be provided with additional information and feedback about the purpose of the study. I am also free to discuss any concerns I may have with the university Thesis supervisor Dr Jean Parry (Professional Tutor DEdPsy, Cardiff).

I, _____ (NAME) consent to participate in the study conducted by Robert Kempson (School of Psychology, Cardiff University) under the supervision of Dr Jean Parry (Professional Tutor DEdPsy, Cardiff).

Date:

APPENDIX O
School of Psychology Cardiff University

Interview Schedule

- Welcome pupil and thank for their participation.
- Briefly explain what the study is about and that the interview is an **informal discussion** regarding their experience of mindfulness. **There is no right or wrong response and it is important that they are as honest as possible.**

Question 1: Please tell me about your experience, what was it / has it been like for you learning mindfulness techniques?

Prompts:

What did / do you think about it?
Was / is it hard or easy to do?
How did / do the techniques make you feel?

Question 2: Tell me about your experiences of using mindfulness practice in your lives?

Prompts:

Why did you use mindfulness?
What changes did it make?
How did it make that change?

Question 3: In your experience, what impact does mindfulness practice have for you?

Prompts:

How does it impact your thoughts?
How does it impact the way you feel?
How does it impact the way you behave?

Question 4: In your experience, what situations do you find mindfulness practice useful?

Prompts:

Has anyone used mindfulness at home? If so how?
Has anyone used it with his schoolwork? If so how?
Has anyone used it for anything else?

Question 5: Do you feel that your experience of learning mindfulness has changed you at all, If so, how?

Prompts:

Has it changed your outlook on things?

Question 6: What are the barriers to you practicing mindfulness more regularly?

Prompts:

What things make it hard to practice?
Internal / external

Question 7: What would make you more likely to use mindfulness practice?

Prompts:

Would you like to use it more often?

Question 8: Do you think it would be beneficial for other pupils to learn mindfulness practice?

Prompts:

Why?
What impact may it have for them?
What kind of pupil do you think would benefit?

APPENDIX P
School of Psychology Cardiff University

Annotated Interview Transcript

Initial Codes	Original Transcript	Exploratory comments
<p><u>Transformed initial skepticism (learn)</u></p>	<ul style="list-style-type: none"> • Ok, so you've just finished the mindfulness course yeah? ○ Yeah just finished it. • Ok so I just want you to, initially to take yourself back into the lessons. So the first lessons and all the way through, just kind of tell me what it was like for you? Initially, what did you think about it? Was it something you liked? Was it something you took to easy? Was it hard? That kind of thing. ○ Well I'm a natural born skeptic, so at first I didn't really see how it would be able to benefit me, but then as through the lessons, the first lesson, it was quite an 	<p>Initial skepticism, as he didn't see how mindfulness would be of benefit to him.</p> <p>Use of term "an alien prospect" refers to the fact that it was not something he was used to and this took effort to engage with.</p>

<p><u>Enhanced ability to focus (general)</u></p> <p><u>Reduction in intrusive thoughts (general)</u></p> <p><u>Focused on the present (general)</u></p> <p><u>Reduction in intrusive thought (general)</u></p>	<p>haven't done, err... whether I'm going to get into trouble. Um, what's for dinner tonight and as the lessons went on I really learnt to focus my mind on the now and blank my mind on just... focus on the breathing and um and to focus your mind and remember the now and to focus on your breathing, something that I found very useful when to keep you in the now is to focus on your breathing. Coz I can just like keep my mind blank, everything every time I tried to do that, like a thought would come in, but if you focused on something, it would tend to help me to keep my mind in the now.</p> <ul style="list-style-type: none"> • Ok that's cool, so what was it like in the lessons? Were the techniques hard to do? ○ Well the 'Seven – Eleven' was an easy concept to follow and it was very effective. • That's the breathing? 	<p>Developed an ability to focus on the present and reduce the amount of unnecessary conscious thoughts he had. This suggests that the ability to focus is inversely related to the amount of unnecessary thoughts going on.</p> <p>He found focusing on his breath helpful in focusing on the present.</p> <p>Able to quite his mind and reduce conscious stream of thought.</p> <p>Found 7-11 breathing easy to do and found that it was beneficial for him. What was it effective at doing?</p>
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<p><u>New experience (learn)</u></p> <p><u>Exploration of self (learn)</u></p> <p><u>Transformed initial skepticism</u></p> <p><u>Closed mindedness</u></p>	<ul style="list-style-type: none"> ○ That's breathing seven in, doesn't matter how long it takes you. Just seven in and then eleven out and then there's the torchlight on your body where you sit down like that and you just focus from the top of your toes. Just follow your body and feelings and find the feelings and you follow it right up your body and those were also very useful because you don't ever do that if you weren't in a class to do that. So it was maybe the first time you've tried to explore yourself, which was quite good. ● Ok that's cool, you said at the beginning you were a bit of a skeptic. ○ Well I didn't see how focusing on your feelings or focusing on your body helped in any way to deal with stress or deal with something like that, it just didn't apply to me. I just didn't think it would be able to do something effectively like that. But if you shut your mind off to something then you can't expect it to work, but if you open your mind to it then it does. 	<p>Useful to do technique, as you don't get a chance to do them elsewhere.</p> <p>Feels it gave him a positive opportunity to explore himself. What does explore himself relate to. Is it a physical exploration, cognitive exploration a reflective process?</p> <p>Initially skeptical of how focusing on feelings and the body could help deal with stress.</p> <p>He suggests that openness to the course is an important</p>
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<p><u>Helps calm down</u></p> <p><u>Reduces unwanted cognitions (exams)</u></p> <p><u>Clarity of thought (exams)</u></p> <p><u>Reduced intrusive thoughts in exams (learn)</u></p> <p><u>Increased care in exams (learn)</u></p>	<ul style="list-style-type: none"> • How does... is it your thoughts? How does it? <ul style="list-style-type: none"> ○ Well it gives you a chance to have a rest-bite from all the keeping on, all the thoughts in your mind and it makes you able to think clearly and sort your thoughts into like order of like things that I was thinking about was like things that aren't happening so like what's going to happen on the weekend. When I really should be concentrating on the here and now, like, this exam is the important thing. When my mind was following and also during the exam it was good because when you get into an exam and your like 'Ok, I think I've finished, but have I finished' and you just need to take that time to stop. I guess it's the 'b', you need to breathe, think and then go through it again without being hasty and losing marks by just being careless. • Ok that's cool. Well we've... the next part I want to talk about, we've kind of started talking about anyway, is just not so much in the classroom but outside the 	<p>Breathing helps to calm him down.</p> <p>Use of term "rest bite" suggests a temporary alleviation from busy stream of consciousness.</p> <p>Finds it gives him a clarity of thought and an ability to priorities his thoughts and filter them enabling him to focus on the task in front of him.</p> <p>Use of term "take the time to stop" suggests that he is more careful during exams not to make silly mistakes.</p> <p>Found it made him be less hasty and take the time to check his answers and not to lose careless marks.</p>
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<p><u>Interpersonal benefits</u></p>	<p>classroom what, you know, what uses have you found for the techniques you've learnt in the classroom and just what was going on for you? So if you just think about the times you have used any of the techniques. What was going on for you at the time? What did you do? What technique did you apply and how did it help?</p> <ul style="list-style-type: none"> o Err, as well as being quite a skeptic, I also have quite a temper. When I get into arguments I do tend to err, say and do things that I wouldn't do in my right mind. Especially when you're with friends and you have an argument with your friends, if you say something that's a bit over dramatic it can make the argument way more detrimental and so I guess the '.b' and the 'Seven – Eleven' has been things that I've used. So the '.b' is just like half way through, before you say something that you know will either make the argument worse or stop your friendship overall, you just stop and just think before you say or do something. Then it just makes you able to look at the 	<p>Perceives himself as someone with a hot temper.</p>
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<p><u>Consider consequences of actions (interpersonal)</u></p> <p><u>Coping with rumination in argument</u></p> <p><u>Deep sense of calm</u></p> <p><u>Coping with negative feelings</u></p> <p><u>Increased perspective taking (interpersonal)</u></p> <p><u>Increased reflection on own actions (interpersonal)</u></p> <p><u>Less reactive in arguments</u></p>	<p>environment, see what if you did that then it would just blow things way out of proportion. If you just stopped and thought about what you are going to say then maybe hold it back in it would make you, make the situation a lot better and also I'm also another person that when I have an argument, I don't forget about the argument so it just moles over in my head for about an hour or two and I just get more and more worked up, even though everybody else has calmed back down by then, I'm still the one being angry. But with a 'Seven – Eleven' you can just really calm down and, not just a superficial calm down when you just look happy and your Ok, it actually helps you sort it out inside and maybe see, 'was I wrong'? It makes you able to assess the argument itself seeing if it's futile. Your continuation of it and then it makes you, it's really good it's helped me a lot.</p> <ul style="list-style-type: none"> • So do you think it's made a big difference in the way that you relate to others, your friends? 	<p>Used .b mindfulness technique to combat being hot headed in an argument.</p> <p>Enables him to think before he acts so not to be responsive to him emotions but to apply cognitive processing to the argument. He increases his reflection on his actions or potential actions</p> <p>Able to think rationally about the choices he can take and the potential consequences.</p> <p>Has difficulty in letting go of an argument, tends to ruminate of salient aspects and get worked up about them. He finds the breathing technique helpful in coping with this and in calming down.</p> <p>Use of term “not just superficial” suggests he really does feel that he is calm. It enables him to work through his feelings and take a different perspective.</p> <p>Improved ability to take a reflective stance in an argument and see his own part in it.</p>
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<p><u>Consideration of approach to revision (learning)</u></p> <p><u>Increased awareness of negative revision habits (learning)</u></p> <p><u>Alternative strategy (learning)</u></p> <p><u>Increased motivation to succeed (learning)</u></p> <p><u>Higher academic</u></p>	<p><u>explored the idea of changing what I've done.</u> It's always been like 'oh I'll get through them', <u>nowadays it's no longer about getting through, it's about being the top.</u> So I think mindfulness has given me the push to get on because it's been able to make me think, 'I don't want to do just a mediocre job, I want to be up with the high flyers'.</p> <ul style="list-style-type: none"> • Ok that's fab, great. So again you've touched upon it... do you think, not just the techniques, but just having learnt about mindfulness. What kind of changes have you seen in your self? ○ <u>Um, I definitely have noticed I'm a lot more calmer and I think everybody can test to that.</u> Um, <u>it just makes me an easier person to get, I've never been like a difficult person but I've also been quite opinionated and always think that my opinion is the right one</u> and <u>I think this has enabled me to err, as you say, look at the other persons point of view and realize that opinion is another point of view, it can't be</u> 	<p>Concept of really considering the importance of his exams has made an impact on him.</p> <p>The course has made him consider the way he revises and how poorly he does it.</p> <p>Made him aware of an alternative strategy to help him.</p> <p>Has made him think about learning at a deeper level so not just getting it done for its own sake but actually seeing how learning can benefit him in the future.</p>
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<p><u>Consideration of future aspirations (learn)</u></p>	<p>will... I don't want to live a life that which I'll be regretful or realise I could have done better but I did because of laziness.</p> <ul style="list-style-type: none"> • Great ok, so the last part, I just wanted to talk about if you could is just about what do you think are the barriers to practicing mindfulness? What do you think are the things that either internally or external things that make it difficult to practice or stop it from working? ○ In a group, I guess if you don't have a group that doesn't want to work together as a group then I guess it would be a lot harder. Like, lots of my friends say 'oh no mindfulness doesn't work, mindfulness'... but it's because their class spent more time giggling, laughing and the don't actually really appreciate the true parts of mindfulness. They don't really look at it, they don't pay enough attention to see the benefits, so they... • Do you think that makes a difference? That pupils' 	<p>Mindfulness has had a part to play in making him consider his future and to look at his aspirational target.</p>
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<p><u>Lack of group cohesiveness as a barrier</u></p> <p><u>Negative pupil behaviour as a barrier</u></p> <p><u>Lack of effort as a barrier</u></p>	<p>would have a...</p> <ul style="list-style-type: none"> ○ Oh yeah, massive difference because if you're not able to explore mindfulness then you won't be able to understand it and maybe use it in an outside situation and if everybody was just laughing then I don't know if you'd feel a bit stupid by using it on the outside but err, it definitely wouldn't make it easier. • Ok, anything else that you think makes it? ○ Um, I guess there's always the personal strife when in my opinion especially when you first go into it you really realize it's, number one, do I need to change? Coz I think, 'I'm doing alright' and number two, 'will this help me change my breathing, my body' coz it doesn't really have a recipe when you look at it for being an award winning thing, but when you really look at it and you notice the effect it has on you in just a few lessons or by doing it at home then it's, it should be something that should be looked at more readily by 	<p>He thinks that the group dynamic is an influential factor in the effectiveness of the course.</p> <p>He believes that pupils are negative about mindfulness if they have experienced a negative classroom environment.</p> <p>Use of the term " <i>they don't really look at it</i>" suggests that the concept requires careful consideration and thought. This idea suggests that mindfulness requires attention and effort in order to experience the benefits of the course.</p>
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<p><u>Lack of exploration as a barrier</u></p> <p><u>Negative peer influence as a barrier</u></p> <p><u>Self consciousness as a barrier</u></p> <p><u>Unwillingness to accept change as a barrier</u></p> <p><u>Sense of contentment as a barrier</u></p> <p><u>Level of engagement as a barrier to effectiveness</u></p>	<p>people and I think um, a class which is laughing will actually be robbed of an opportunity to make them a lot better and make them realize what an asset it is.</p> <ul style="list-style-type: none"> • Anything that um would make you more likely to use it more regularly? ○ Um I guess more regular intervals, I guess we've only really had a limited time to learn it so um, we haven't looked at all the aspects. So we haven't really had a chance to look at the feelings and emotions and that sort of stuff. So I think if you had a bigger, longer course then that would mean we would really go into it and look at all the different things that you could do and then go and find every little bit and bring it back so you can go into every single corner of mindfulness and have a total experience and not just maybe, I know know, it's not a cut and paste thing, but you do miss out on some bits that um are important. • Ok that's cool and how about in your life in general. Is 	<p>He feels that thinking about mindfulness and cognitively exploring the concept is important in enabling a person to apply it in his or her own lives. Without this exploration they will not know how to use it.</p> <p>Influence of peers as an important factor in engagement in the lesson.</p> <p>Also noting self-consciousness and the idea that you would feel uncomfortable trying something if others thought it was silly.</p> <p>Refers to an idea that in order to engage with mindfulness you have to have a sense of commitment to change. You have to want to apply it for some reason.</p> <p>Doesn't feel that on the surface mindfulness sounds like an influential concept. This suggests that on a deeper level mindfulness really is influential " Use of the term "when you really look at it" there is a suggestion that mindfulness needs to be thought about and considered.</p>
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<p><u>Negative peer behaviour as a barrier</u></p> <p><u>Short course length as a barrier</u></p> <p><u>Sense of not covering everything (general)</u></p> <p><u>Lack of exploration</u></p>	<p>there any thing that um would make you more likely to um, you know... what type of things would make you likely to want to use it?</p> <p>o Well I think, as life gets more stressful, there's going to be a bigger opportunity and bigger need for mindfulness. So especially as we are going into GCSE or A level or university, that there's always going to be that stress, its never going to go away and if you don't cope with it then it's going to defeat you and if it defeats you then you're not going to be able to do what you want. So I think mindfulness is an asset that you can use against stress or just the complexity of life in general. That will make you able to deal with life in the best way possible and make you more able to live your life at a better rate than err, what you do if you let stress take over.</p> <ul style="list-style-type: none"> • Great, do you think it's something that other pupils would benefit from learning? Not necessarily just in Tonbridge, but do you think... 	<p>Refers to the idea that positive experience can lead to future use.</p> <p>Not paying attention leads to poor engagement.</p> <p>He feels that the short course length as a barrier to future practice.</p> <p>Feels that there is more to mindfulness than is taught in the course and that by not experiencing this he is missing out on the potential benefits that it may have.</p> <p>Use of term, "it's not a cut and paste thing" suggests that the</p>
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APPENDIX Q
School of Psychology Cardiff University

Interview Themes (IMPACTS)

- Red – Interview one
- Blue – Interview two
- Green – Interview Three
- Purple – Interview Four
- Brown – Interview five
- Orange – Interview six
- Grey – Interview seven
- Black – Interview Eight

Theme One: Calm & Relaxation

“ Perception that mindfulness induces a sense of Calm and Relaxation”.

Sub-Theme One: Personal Relaxation

“Perception that mindfulness induces a sense of calm for pupils.

Coded Extracts

- Induces calm when upset
- Calming effect
- Induced a sense of calm (play)
- Induces sense of calm (play)
- Induced calm (play)
- Induces relaxation (sleep)
- Relaxation (sleep)
- Induced calm (sleep)
- Induces calm (sleep)
- Induces calm (sleep)
- Induces relaxation
- Induces relaxation
- Help to relax
- Breathing and .b Induces calm
- Induces relaxation

- Induces relaxation
- Induces relaxation
- Induced relaxation (general)
- Induces calm
- Calming effect
- Useful for relaxation during stressful circumstance
- Induced Calm
- Induced a deep level of relaxation
- Deep sense of calm
- Deep relaxation (sleep)
- Bodily sensation
- Positive physical sensation
- Induced physical relaxation
- Physical response (sleep)
- Used to combat physical symptoms of stress

Sub-Theme Four: Group Calm

“Perception that mindfulness induces a sense of calm in the class group”

- Group calm (general)
- Group calm (general)
- Increased group calm (general)
- Induces group calm (general)

Theme Two: Perspective

“ Perception that mindfulness impacts pupils’ perspective on the use of mindfulness”

Subtheme One: Alternative Perspective

“Perception that mindfulness impacts on pupils’ outward perspective”

- Offered a new perspective
- Present focus is a useful outlook
- Perception that it should be part of curriculum
- Change in perspective (learn)
- Change in perspective (learn)
- Important change (learn)

- Awareness of benefits of being patient
- Highlighted the importance of each moment (learn)
- Increased awareness
- Change in awareness
- Awareness of value
- Increased awareness (general)
- Increased awareness of bodily movements
- Increased awareness of environment
- Increased awareness

Sub-Theme Two: Knowledge & Interest

“Perception that mindfulness has provided them with useful and interesting knowledge”

- Stimulated interest in potential uses (general)
- Built upon prior knowledge, stimulated further interest (general)
- Discussions with peers over impact
- Concept makes sense
- Concept made sense
- Concept of attention benefits made sense
- Found interesting (learn)
- Interesting (learn)
- Interesting (learn)
- Intrigued by concept
- Sense of not covering everything (general)
- Labeled feeling
- Built upon prior knowledge, stimulated further interest (general)
- Supporting research as a facilitator
- Research evidence as a facilitator
- New concept (learn)
- Concepts make sense (learn)
- New experience (learn)

Sub-Theme Four: Transformed skepticism

“Perception that learning mindfulness has transformed pupils’ skepticism about the impact that it has”

- Transformed initial skepticism
- Reduced skepticism
- Reduction in cynicism
- Transformed initial skepticism
- Transformed initial skepticism
- Transformed initial skepticism (learn)
- Transformed skepticism (learn)
- Reduced skepticism (learn)
- Transformed initial skepticism (learn)
- Transformed initial skepticism
- Change in opinion over time.
- Transformed in initial skepticism
- Increased respect for meditative traditions
- Increased openness to meditative techniques

Theme Three: Self-Transformation

“Perception that mindfulness impacts the way pupils view themselves”.

Sub-Theme One: Approach Motivation

“Perception that mindfulness impacts on pupils goal motivated behaviour”

- Reduced focus of goal only focus
- Reduction in goal orientation (sport)
- Reduced goal orientation (general)
- Self directed goals (general)
- Changed approach to challenge (general)
- Reduced influence of peers (general)
- Improved engagement in work
- Impact on engagement with work
- Deeper engagement learning
- Change in approach to learning

- Increased personal involvement in learning
- Changed approach to learning
- Intrinsic reward for learning
- Learning for learning's sake
- Changed approach to work
- Approach to work (learning)
- Awareness of higher potential (learning)
- Increased motivation to succeed (learning)
- Higher academic aspirations (learning)
- Conviction in ability (learning)
- Consideration of approach to revision (learning)
- Increased awareness of negative revision habits (learning)
- Increased care in exams (learning)
- Alternative strategy (learning)
- Self directed goals (general)

Sub-Theme Two: Empathy

“Perception that mindfulness impacts pupils willingness to consider another’s perspective”

- Consider consequences of actions (interpersonal)
- Increased perspective taking (interpersonal)
- Consideration of another’s perspective (interpersonal)
- Perspective taking (interpersonal)
- More empathetic (interpersonal)
- Increased empathy (interpersonal)
- Less dogmatic (interpersonal)
- Increased empathy (interpersonal)

Sub-Theme Three: Self-regulation

“Perception that mindfulness impacts pupil behaviour by increasing their self-awareness”

- Increased reflection on own actions (interpersonal)
- Reduces self centeredness (interpersonal)
- Increased consideration of actions
- Less reactive in arguments (interpersonal)
- More thoughtful (interpersonal)
- Increased consideration (interpersonal)
- Consider consequences of actions (interpersonal)
- More considered arguments (interpersonal)
- More calm (learn)
- More personable (learn)
- Less opinionated (learn)
- Consideration of future aspirations (learn)

Sub-Theme Four: Insight

“Perception that mindfulness impacts pupils inclination to be self reflective and insightful as to the nature of their thoughts and mind”

- Understanding of mental processes
- Understanding of mental processes
- Increased understanding of own actions
- Awareness of difficulty controlling the mind
- Belief in the power of the mind (learn)
- Awareness of mental perspective (learn)
- Exploration of self (learn)
- Personal reflection (interpersonal)
- Change in perspective of self (general)
- Self-perception (general)

Theme Three: Control

“Perception that mindfulness impacts pupils’ ability to exert control over their life”

Sub-Theme One: Cognitive Control

“Perception that mindfulness impacts the way in which pupils’ cognitively process negative information”.

Reduced Rumination

- Reduces over thinking (general)
- Reduced rumination
- Anchoring induces reduced intrusive cognitions (general)
- Combats rumination
- Reduced rumination
- Combats rumination (sleep)
- Reduced rumination (sleep)
- Reduced rumination (sleep)
- Reduction in ruminative thought (sleep)
- Deal with rumination (sleep)
- Reduced rumination (sleep, exams)
- Reduced rumination (sleep, exams)

Reduced Catastrophizing

- Reduced catastrophizing of thoughts (sleep)
- Reduced catastrophizing
- Reduces catastrophizing (sleep)
- Reduces catastrophizing (learning)

Cognitive Reframing

- Rationalized thoughts
- Rationalized thoughts (worry)
- Focus on positive (Play)
- Rationalization of thoughts (play)
- Put things in perspective
- Positive reframing
- Focus on positive

Reduced Intrusive Thoughts

- Clarity of thought (general)
- Clarity of thought
- Clarity of thought (exams)
- Calms the mind (learning)
- Clarity of thought
- Reduction in intrusive thoughts (general)
- Reduction in intrusive thought (general)
- Reduction in intrusive thoughts (sleep)
- Reduced intrusive thoughts (sleep)
- Reduces unwanted cognitions (exams)
- Reduction in intrusive thoughts (sleep)
- Reduced intrusive thoughts in exams (learning)

Sub-Theme Two: Attentional control

“Perception that mindfulness influences pupils’ attentional capabilities”.

Attentional Focus

- Increased confidence in ability to focus (learning)
- Increased ability to focus
- Improves focus (general)
- Task focus
- Help to focus the mind
- Meditation improved attentional focus (conflict)
- Breathing technique helps focus the mind
- Improved focus on task
- Improved focus
- Enhanced ability to focus (general)
- Increased focus (general)
- Allocation and deployment of attention (learning)
- Allocation of attention (learning)
- Re-focusing (allocation of attention) (Learning)
- Increased focus and readiness (play)
- Attentional focus worked
- Confidence in ability to focus
- Helps focus on homework (learning)

Concentration

- Increased confidence in ability to concentrate (general)
- Improved concentration
- Improves concentration (general)
- Improves concentration
- Improved concentration
- Improved concentration
- Increased concentration (general)
- Concentration (learning)
- Increased confidence in ability to concentrate on work
- Improved concentration in lessons (learning)

Reduced Distraction

- Improves learning by reducing mind wandering (learning)
- Reduced mind wandering
- Reduced impact of distractions
- Reduced mind wandering
- Reduced mind wandering (general)
- Reduced awareness of environment
- Reduced influence of distractions (general)
- Awareness of mind wandering (learning)
- Combats mind-wandering (learning)
- Combats poor attention (learning)
- Efficient homework due to reduced distraction (learning)
- Reduced external distractions
- Reduced impact of external distractions
- Reduced impact of external distractions

Theme four: Functioning

“Perception that mindfulness impacts pupils ability to function in relation to certain abilities”.

Sub-Theme One: Acting Performance

“Perception that mindfulness impacts pupils acting performance”

- Used for play

Induced Calm

- Induced a sense of calm (play)
- Induces sense of calm (play)
- Induced calm (play)

Cognitive Functioning

- Rationalization of thoughts (play)
- Reduced panic (play)
- Reduced self-consciousness (play)
- Increased focus and readiness (play)
- Focus on positive

Sub-Theme Two: Interpersonal Communication

“Perception that mindfulness impacts pupils interpersonal communication with their peers and family.

- Interpersonal benefits
- Interpersonal benefits
- Coping with anger frustration (interpersonal)
- Dealing with interpersonal conflict
- Creates space and time for argument to distinguish (interpersonal)
- Improved communication with mother (interpersonal)
- Increased tolerant behaviour (interpersonal)
- Reduced verbal aggression (interpersonal)

Empathy

- Consider consequences of actions (interpersonal)
- Increased perspective taking (interpersonal)
- Consideration of another’s perspective (interpersonal)
- Perspective taking (interpersonal)
- More empathetic (interpersonal)
- Increased empathy (interpersonal)
- Less dogmatic (interpersonal)
- Increased empathy (interpersonal)

Self-reflection & Reflexivity

- Increased reflection on own actions (interpersonal)
- Reduces self centeredness (interpersonal)
- Personal reflection (interpersonal)
- Increased consideration of actions
- Less reactive in arguments (interpersonal)
- More thoughtful (interpersonal)
- Increased consideration (interpersonal)
- Consider consequences of actions (interpersonal)
- More considered arguments (interpersonal)

Sub-Theme Three: Academic Functioning

“Perception that mindfulness impacts pupils academic functioning”

Homework

- Homework efficiency (learning)
- Helpful for note taking
- Helpful for homework
- Improves homework
- Assists homework
- Helpful in homework (learning)
- Helpful in homework
- Helpful to prepare for homework

Learning

- Assists learning
- Application of lesson content to learning
- Modest impact (learning)
- Application of mindfulness to work
- Improved school report
- Improves memory recall (learning)

Exams

- Use in exams
- Preparation for exams
- Useful in exams (learning)
- Useful in exams
- Helps revision (learning)
- Coping with test worry (learning)

Approach to learning

- Improved engagement in work
- Impact on engagement with work
- Deeper engagement learning
- Change in approach to learning
- Increased personal involvement in learning
- Reduced focus of goal only focus
- Changed approach to learning
- Intrinsic reward for learning
- Learning for learning's sake
- Changed approach to work
- Approach to work (learning)
- Awareness of higher potential (learning)
- Increased motivation to succeed (learning)
- Higher academic aspirations (learning)
- Conviction in ability (learning)
- Consideration of approach to revision (learning)
- Increased awareness of negative revision habits (learning)
- Increased care in exams (learning)
- Alternative strategy (learning)
- Self directed goals (general)

Attention and concentration

- Allocation and deployment of attention (learning)
- Allocation of attention (learning)
- Re-focusing (allocation of attention) (Learning)
- Improves learning by reducing mind wandering (learning)
- Awareness of mind wandering (learning)
- Combats poor attention (learning)
- Concentration (learning)
- Increased confidence in ability to concentrate on work
- Efficient homework due to reduced distraction (learning)
- Improved concentration in lessons (learning)
- Combats mind-wandering (learning)
- Reduced external distractions
- Helps focus on homework (learning)
- Combats tiredness (learning)

Cognitive Control

- Reduced rumination (sleep, exams)
- Reduced worry (learning)
- Reduces unwanted cognitions (exams)
- Clarity of thought (exams)
- Reduced intrusive thoughts in exams (learning)
- Reduces catastrophizing (learning)
- Calms the mind (learning)
- Awareness of mental processes (learning)

Sub-Theme Four: Sleep

“Perception that mindfulness impacts pupils ability to sleep”

- Improved ability to fall asleep
- Unexpected positive impact (sleep)
- Used to get to sleep
- Uses to get to sleep
- Helpful to get sleep
- Helped getting to sleep (behaviour, exams)
- Helps sleep during exam period
- Helped get to sleep (sleep)
- Helps him sleep during exam period
- Helpful in getting to sleep

Relaxation

- Induces relaxation (sleep)
- Physical response (sleep)
- Deep relaxation (sleep)
- Relaxation (sleep)
- Induced calm (sleep)
- Induces calm (sleep)
- Induces calm (sleep)

Rumination

- Reduced rumination (sleep, exams)
- Reduction in intrusive thoughts (sleep)
- Combats rumination (sleep)
- Reduced rumination (sleep)
- Reduced rumination (sleep)
- Reduced catastrophizing of thoughts (sleep)
- Acceptance (sleep)
- Reduction in ruminative thought (sleep)
- Reduction in intrusive thoughts (sleep)
- Reduced worry (sleep)
- Reduced intrusive thoughts (sleep)
- Reduces catastrophizing (sleep)
- Deal with rumination (sleep)

Sub-theme Five: Sports Performance

“Perception that mindfulness impacts on pupils sports performance”

- Use in sports
- Breathing technique used to prepare for sports event
- Helpful in sport
- Helpful in sport
- Useful to prepare for action (sport)
- Improved technical ability (sport)
- Useful in sport
- Used to prepare for sporting activity
- Benefited performance (sport)
- Simplifies (sport)
-

Persistence

- Increased task persistence (sport)
- Increased ability to deal with discomfort (sport)

Relaxation

- Calming you down in preparation for sport
- Reduced heart rate and improved focus (sport)
- Induced relaxation (sport)

Cognitive control

- Reduced anxiety (sport)
- Rationalizing thoughts (sport)
- Reduces frustration (sport)
- Reduced awareness of cognitions (sport)
- Reduction of panic (sport)
- Reduced distractions /Executive control (sport)
- Focusing in sport
- Helps mental preparation (sport)
- Reduced awareness of cognitions (sport)
- Increased concentration (sport)
- Reduced worry (sport)
- Reduction in overthinking (sport)
- Improved sustained attention (sport)
- Induces a clarity of mind (sport)
- Reduction in overthinking (sport)
- Rationalized thought (sport)
- Rational thinking (sport)

Theme Three: Specific Coping strategy

“Perception that mindfulness is a specific coping strategy, rather than a regular practice”.

- Additional coping strategy (general)
- Uses as a coping strategy
- Confidence in application as a coping strategy
- Coping strategy for worry
- Coping strategy for rumination
- Specific use (general)

- Specific use (general)
- Specific use
- Use as a goal orientated strategy
- Coping strategy
- Awareness of potential utility (learn)
- Coping strategy
- Alternative coping strategy (pain)

Learning related issues

- Coping strategy to help concentrate (learn)
- Coping strategy to help if worried (learn)
- Provides coping strategy (learn)
- Personal application (learn)
- Applicability to settings (learn)
- Personal application (learn)
- Coping strategy (learn)
- Coping strategy for boredom (learn)

Stress

- Coping strategy for exam nerves (stress& worry)
- Coping strategy for stress
- Detachment of self from an issue (stress)
- Useful in combating nervousness (general)
- Coping with nerves
- Coping with negative feelings
- Combats worry
- Reduced impact of external stressors
- Reduced impact of negative cognition
- Acceptance of negative thoughts
- Increased acceptance
- Used to combat worry
- Used in time of shock / crisis
- Allowed pupil to function during stressful time

- Reduced impact of negative event
- Coping strategy for exam nerves (stress& worry)
- Coping strategy for stress
- Increased functioning (stress)

APPENDIX R
School of Psychology Cardiff University

Interview Themes (BARRIERS)

Perceived barriers to pupil's use of mindfulness practice

Pupil self-consciousness

Initial Codes

Self-consciousness as a barrier

Perceived perceptions of others as a barrier

Self-consciousness as a barrier

Negative self-comparison to others as a barrier

Self-consciousness as a barrier

Perceived lack of time

Busy timetable as barrier to effectiveness

Perceived lack of time as a barrier

Perception of having not enough time as a barrier

Perceived lack of time as a barrier

Perceived lack of time as a barrier

Other demands on time as a barrier

(External distractions)

Perception of not enough time as a barrier

Perception that not enough time as a barrier

Conflict with other demands on time as a barrier

Lack of time as a barrier

Perceived lack of time as a barrier

Perceived lack of Need

Lack of need as a barrier to effect
Lack of target outcome as a barrier
Absence of difficulty as a barrier to use
Absence of difficulty as a barrier to use
Absence of pressure as a barrier to engagement
Absence of significant problem as a barrier to engagement
Absence of worry as a barrier to engagement
Sense of contentment as a barrier
Unwillingness to accept change as a barrier
Absence of stress as a barrier to engagement
Personal content as a barrier

Preformed negative beliefs

Skepticism as a barrier to engagement
Supporting research as a facilitator
Negative preconceptions of the course as a barrier to engagement
Skepticism as a barrier
Skepticism as a barrier
Skepticism over relaxation as a barrier
Negative connotations as a barrier

Lack of impact

Initial breathing techniques not useful.
Pain technique unhelpful
Perceived lack of impact as a barrier
Perceived lack of impact as a barrier
Perceived lack of impact as a barrier
Inconsistent impact as a barrier
Lack of action as a barrier
Perceived inapplicability as a barrier
Practicality as a barrier

Perceived lack of ability

Memory of technique as a barrier

Lack of confidence (uncertainty) in personal application as a barrier to effectiveness

Lack of confidence as a barrier

Short course length as a barrier

Perception of self as no good as a barrier

Limited knowledge of application possibilities as a barrier to usage

Lack of guidance

Self-autonomy as a barrier

Lack of guidance as a barrier

Lack of guidance as a barrier

Guide facilitates effectiveness

Lack of guidance as a barrier

Lack of guidance and support as a barrier

Verbal guidance as a facilitator

Lack of support for technique application as a barrier

Lack of audio guidance as a barrier

Forgetfulness

Not thinking about it as a barrier

Not doing lessons leads to forgetfulness as a barrier

Lack of current lessons as a barrier

Forgetfulness as a barrier to engagement

School holidays as a barrier

Lack of outcome target as a barrier (general)

Not embedded into structure as a barrier (learning)

Lack of structured time as a barrier

Self-autonomy as a barrier

Perceived barriers to the impact of mindfulness techniques

Attention and concentration skills

Initial difficulty with deployment of attention

Deployment of attention as a barrier

Shifting attention as a barrier

Attention impacted by target specificity

Attention impacted by target size

Difficulty focusing as a barrier

Difficulty focusing as a barrier

Difficulty focusing as a barrier / distraction of thoughts

Difficulty with concentration as a barrier

Emotional response

Frustration as a barrier to effectiveness and engagement

Initial frustration as a barrier to engagement

Self-criticism as a barrier

Boredom as a barrier to engagement

Boredom as a barrier

Distractions (internal / external)

Distraction reduces effectiveness

External noise as a barrier

Distractions as a barrier (executive control)

External distractions as a barrier

Distractions as a barrier to engagement

Noise distraction as a barrier to effectiveness

External noise as a barrier to effectiveness

External noise as a barrier

Peers misbehaving as a barrier

Disengagement of peers as a barrier

Distracting behaviour of peers as a barrier
Lack of group cohesiveness as a barrier
Negative pupil behaviour as a barrier
Negative peer influence as a barrier
Negative peer behaviour as a barrier
Peer influence as a barrier
Peer influence as a barrier
Group dynamic as a barrier
Peer influence as a barrier
Cognitive distraction as a barrier to effectiveness

Pupil engagement

Inappropriate mindset as a barrier to engagement
Inappropriate mindset as a barrier
Lack of preparation as a barrier
Lack of interest as a barrier
Level of engagement impacts difficulty
Inappropriate mindset as a barrier
Lack of focus as a barrier
Rushing a technique as a barrier
Focus on outcome as a barrier to effectiveness
Lack of focus as a barrier
Inappropriate mood as a barrier to engagement
Inappropriate mood as a barrier to engagement
Inappropriate preparation as a barrier
Negative approach as a potential barrier
Lack of openness as a barrier
Closed mindedness as a barrier to engagement
Closed-mindedness as a barrier
Lack of effort as a barrier
Lack of exploration as a barrier
Level of engagement as a barrier to effectiveness
Lack of effort as a barrier
Lack of effort as a barrier to effectiveness
Lack of exploration as a barrier
Lack of investment of time as a barrier

Lack of investment of time as a barrier

Lack of interest as a barrier

Lack of perseverance as a barrier

Technical difficulty

Underestimation of difficulty as a barrier

Initial difficulty as a barrier to engagement

Inappropriate technique application to circumstance as barrier

Focus on task process as a barrier to effectiveness (Conscious competence)

Difficulty in acceptance as a barrier

Meta cognitive techniques are hard

Length of technique

Length of meditation as a barrier

Perception that eating takes too long

Time length of technique as barrier

Technique length as a barrier

RAW DATA

Online Questionnaire Raw Data	On Disc
Interview and Focus Group Transcripts	On Disc
Responses to open Ended Questions	On Disc